# The MODERN HOSPITAL

Vol. I September, 1913 No. 1

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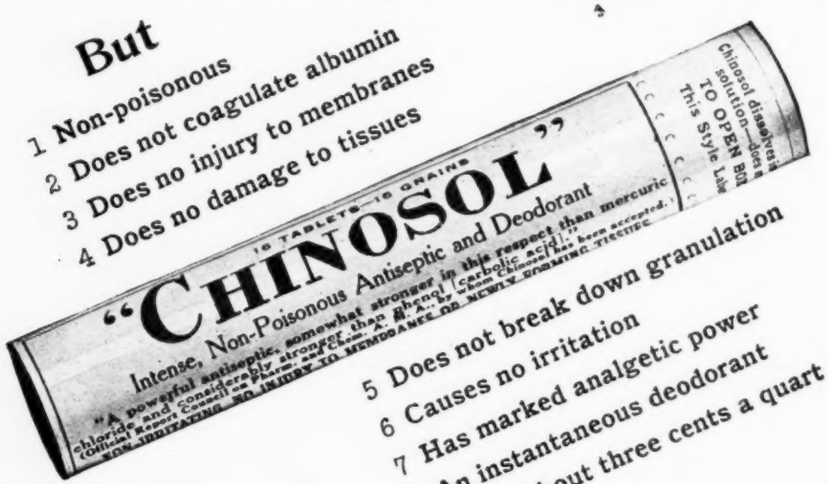


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# THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical and Nursing Services

Vol I September, 1913 No. 1


## HOSPITAL GROWTH MARKS DAWN OF NEW ERA.

### Vast Increase In Number and Variety of Institutions Is Chief Factor In Reshaping Modern Society.


By A. J. OCHSNER, M. D., LL. D., F. R. M. S.

SURGEON-IN-CHIEF OF AUGUSTANA HOSPITAL AND ST. MARY'S HOSPITAL; PROFESSOR OF CLINICAL SURGERY IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF ILLINOIS, CHICAGO.


THE tendency toward efficiency in institutions established for humanitarian purposes is most prominent at the present time. This has become especially apparent on all sides during the past few years in the hospital movement in this country. Men of excellent training, unusual ability, clear judgment, and force of character are giving an enormous amount of attention systematically to this work, and many very able men give all of their attention to it. In this manner it is quite naturally to be expected that the present generation will have the opportunity of observing the same phenomenal advancement in this field that has characterized the development of personal business enterprises in the past generation, a development the like of which the world has never before seen.

My attention has been called to a most interesting report of the meeting of the American Medical Association of the year 1873, which was compiled from replies to inquiries by the United States Bureau of Education, and which will serve as an illustration of the progress in the development of hospitals in this country. According to this report, there existed in this country forty years ago 149 hospitals, with 35,453 beds. Of these, 51, with 16,553 beds, were used for the care of insane patients; 43, with 12,322 beds, were used for the treatment of patients under the care of municipalities; and only 51, with 5,453 beds, for the care of patients who were not strictly public charges. Of the last class, 40 were church hospitals, with 4,923 beds, and 15 private hospitals, with 1,530 beds, and only one hospital, with 125 beds, was conducted by a corporation.

According to these statistics, 57 of these hospitals, with 19,044 beds, had been founded before 1853, or twenty years prior to the date on which these statistics were taken, which is exactly one-half of the time which has elapsed since these statistics were published. Of these 57 hospitals, with 19,044 beds, there were in use for the care of the insane, 25, with 8,919 beds; for the care of patients the charges of municipalities, 16, with 8,166 beds; and only 14, with 1,959 beds, were in use for patients who were not public charges. Of these there were 8 church hospitals, with 1,480 beds, and 6 private hospitals, with 479 beds. The difference in the twenty years is very great, the number of hospitals having nearly trebled and the capacity of all of the hospitals having nearly doubled. The relative proportion of increase of hospitals for the insane and their capacity maintained the same proportion that the general increase shows, but there was an increase of not quite 40 percent in the number of beds provided by municipalities for the care of the poor in general hospitals, while the number of beds provided by church hospitals and private hospitals had more than trebled during this period of twenty years. The number of hospital beds which were provided outside of municipal support was, however, still very small, and it must be remembered that almost all of these beds were occupied by the poor, who did not contribute much directly toward the support of these institutions.

To a very great extent, then, the activity of these institutions was limited to those who were direct charges of the public, either through the municipalities, or churches, or social organizations, and those who could not obtain proper care in their homes. The idea that the hospital is one of the necessary elements without which it is impossible to give to the patients the best possible care they can receive when they are seriously ill had not yet developed. It was only toward the end of the last century that this hospital idea came to be accepted as a fact. In many of the older cities of this country it has not quite been accepted as yet, and many of those who could well afford to have the best are still willing to go through sickness under quite unfavorable circumstances, with rather indifferent care, at their homes because they do not as yet appreciate the importance of this hospital movement. This is true especially at the present time in connection with one specialty which is more perfectly suited for hospital care than any other. I refer to the specialty of obstetrics. There can be no doubt that, from the standpoint of the mother and the child, as well as the other members of the family, it would be immeasurably better if all children were born in well-equipped and perfectly organized hospitals. In fact, the wife of the poorest workingman and her child receive better care in a good hospital than it is possible to give to the wealthiest mother in the finest mansion, unless the latter be equipped with a hospital department, such as has been repeatedly suggested by those especially interested in hospital construction. If this country should at some time produce an obstetrician with real powers of organization, such as we have seen especially in surgeons during the past quarter of a century, we may look forward to a greater revolution in this department than we have observed in the past years in surgical concentration and efficiency in hospitals.

In order to make the growth of the hospital movement apparent, it may be interesting to show the statistics of hospitals in the state of Illinois at the present time in comparison to those of forty years ago. It is proper to state that even at that time this state was relatively well supplied with hospitals. An analysis of the statistics of all the hospitals in the country at the present time would be too tedious and would not increase the clearness of the illustration. The state of Illinois contained in 1873, 16 hospitals, with 4,784 beds. Of these beds, 2,270 were employed in the care of insane patients, 1,277 were in municipal hospitals, 650 were contained in church hospitals, and 586 in private hospitals.

At the present time, forty years later, the state of Illinois has 204 hospitals, with 35,859 beds, divided as follows: 9 for the insane, with 13,755 beds; 65 conducted by municipalities, with 8,533 beds; 53 church hospitals, with 8,800 beds; 74 private hospitals, with 4,658 beds; and 3 hospitals used exclusively for employees of factories, with 133 beds. The total number of hospital beds in the state of Illinois today is consequently slightly greater than the number in the entire United States forty years ago.

During these forty years there have been established twelve new hospitals for every one in existence at that time. There are seven and one-half times as many beds in all the hospitals in this state, while the number of beds in hospitals for the care of the insane is only six times as large as the number in 1873. The number of beds in municipal hospitals has increased to six and two-thirds times the original number.

It is, however, in the hospitals to which patients go by choice, and not because of their poverty, in which there has been the greatest change. Where there were only 650 beds conducted by churches or religious orders in 1873, there are now 8,800 here, or thirteen and five-tenths times as many. In place of 15 private hospitals, with 1,530 beds, there are now 74 private hospitals, with 4,657 beds. The number of these hospitals has increased to nearly five times, while the number of beds has increased to only three times the original number.

These statistics must impress everyone who is actually interested with three important facts:

First, there is an enormous increase in the relative number of people who choose hospital care and at the same time choose the class of hospital that will give them the desired care.

Second, there is relatively an enormous amount of money invested in these institutions, which must continue to increase, because many of the present institutions are only temporary and must soon be reconstructed.

Third, any industry requiring such an enormous capital for its initial cost and which is so costly to maintain is well worth the careful thought of many of the ablest men in this country. While the growth of the hospital idea is a national feature, it will be quite worth while to give much thought to every detail of hospital organization, construction, and management, and to exchange these views when they have been thoroughly matured.

In order to make the importance of a comprehension of the hospital movement still more vivid, let us consider existing conditions. During the past forty years each year has seen the establishment of more than 15,000 new hospital beds, and

at least an equal number of old hospitals have had to be reconstructed, so that it will be fair to judge that each year we will have to build new hospitals for at least 30,000 beds in this country. In a general way, it may be stated that for civilized countries it has been agreed by those who have studied the subject that there should be one hospital bed for every one hundred inhabitants, which would make the required number for the United States approximately one million (1,000,000) hospital beds. The number of beds in American hospitals of record, so far as it has been possible to determine this with available statistics, is 666,500, but undoubtedly these statistics do not contain nearly all of the hospital beds actually in use, because they do not contain any of the beds in the very large number of small private hospitals in all parts of this country.

In studying the original cost of construction, we find that this varies from $1,000 to $16,000 per bed. Taking these extremes for one year, the cost in one case would be thirty million dollars ($30,000,000), while in the other it would be four hundred and eighty million dollars ($480,000,000), or nearly half a billion dollars. Count a cost of $5,000 per bed, which is not at all unusual at the present time, and the difference will be $120,000,000 each year; and count this for a period of forty years, such as we have just considered, and the difference would amount to nearly five billion dollars. This sum, if properly invested, would be more than sufficient, for instance, to pay all of the expenses of all the universities now existing in this country for all time to come. These figures are given to impress those who are interested with the very great importance of this subject, and because of the fact that it is well worth the careful attention of the best minds in this country.

What has been said regarding the original cost of construction applies to a still greater extent to the question of maintenance, because this expense never ceases. As an illustration, we need but take two of the best known hospitals in this country. In one of these the actual cost of maintaining a bed is slightly less than $1 per day, while in the other it is $3.30 per day. The difference, then, per bed for the year would be $839.50. Applying this difference to each one of the one million beds which are required in this country, and you would have wasted the stupendous sum of $838,500,000 per year, a sum so vast that one can hardly grasp it. If we do this year after year, it must be apparent that the waste would be sufficient to bankrupt any community.

To those who have not studied this phase of hospital development it may seem unreasonable to consider both of these institutions equal in their efficiency so far as the care of the patients is concerned. As a matter of personal observation, I can state that both institutions are perfectly sanitary and clean, and in both the patients receive most excellent food and the best of care, but in one institution no unnecessary things are purchased on the one hand, and of the supplies that are purchased almost none are wasted. In the other institution a principle which has worked itself into the daily life of almost every member of the medical profession is the real cause of the high cost of maintenance. Every medical man has the feeling that when the life, or health, or care in sickness of the patient is concerned, all other things, and especially the cost of things, are of little or no importance, and as a result of this principle millions and billions of dollars are being expended in hospitals without any reference to what this expenditure will do toward real efficiency. In this way the institution is conducted without definite relation between cost of maintenance and results in efficiency.

It has always been so during the stage of development of every industry, but there is always a time when those who have the ability and the interest will come to the rescue, and then one may look for standardization, which will result not only in greater efficiency, but in true conservation of resources.

The modern hospital gives the public vastly more in the way of facilities for diagnosis, for furthering the progress of the case, with the smallest possible amount of discomfort. It provides for every form of apparatus for investigation during the entire period that the patient is confined to the institution. It provides facilities for all patients which could not have been commanded even by the very wealthiest persons only a quarter of a century ago, and it is but natural that such facilities must be expensive, but, with all of this, it is well not to lose sight of the fact that in the development and maintenance of these features there is great danger of enormous extravagance on the one side and hopeless waste on the other until the standardization of hospitals has been developed from the economical side by capable hospital specialists, and until those interested have been made familiar with this development through an advanced hospital journalism.

The oldest hospital in the world that is still conducted as a hospital is the famous Hotel Dieu, said to have been built by Laudry, Bishop of Paris, about 660 A. D. The oldest hospital that still exists under its original foundation is St. Bartholomew's, of London. It was established in the twelfth century by Rahere, a jester to King Henry I. He retired to a grant of land given to him by the king and established there the great hospital.

# THE MODERN NAVAL HOSPITAL.

## Four New Institutions Incorporating Best Features for Civil Hospitals.

By A. W. DUNBAR, M. D.
SURGEON U. S. NAVY, SUPERINTENDENT WASHINGTON (D. C.) NAVAL HOSPITAL.

THE *raison d'etre* of the naval hospital as well as of the civil hospital is primarily humanitarian, but, as the latter has come to be recognized as of economic value to the commonwealth in the restoration of the wage earner to his work, so has the former a military value in restoration of militant units to the firing line. From a strictly utilitarian point of view, this is the main, if not the sole, function of the naval hospital.

The incurable has no place in the naval service, and is discharged when it may humanely be done, as the liberal federal pension laws provide for these cases when the disability is incurred in the line of duty.

PLATE 1.

In our hospitals no provision is made for the admission of women and children, but otherwise the service is similar to that of a civil general hospital. It may, however, be noted that cases are admitted which in civil life would be treated as out-patients, and again others are retained longer than would occur outside the service for the reason that aboard ship a man must be either sick or "fit for duty," and the latter means any work from shoveling coal to pulling on an oar or lifting a 12-inch shell. These facts should always be borne in mind in comparing the service hospital statistics with results in civil life.

Up to about 1890 the naval hospitals were about in the condition they were at the close of the civil war, except for the deterioration incident to age. The navy was small, its importance unappreciated by a country wearied of war, and the medical department, like the rest of the service, suffered from neglect.

In the early nineties this service lethargy was passing away, and some attempt was made to modernize the hospitals, which, while massively built, were antiquated in design and deficient in equipment. At the outbreak of the Spanish-American War the New York hospital was the only one with a modern equipment.

In 1900 a new era commenced in the naval hospital service, and since that date ten hospitals have been designed and constructed at the following stations: Portsmouth, N. H.; Boston, Mass.; Newport, R. I.; Washington, D. C.; Naval Academy, Annapolis, Md.; North Chicago, Ill.; Las Animas, Colo.; Puget Sound, Wash.; Cavite, P. I., and Guam, Mariana Islands. The Norfolk and Philadelphia hospitals have been practically reconstructed, and extensive additions have been made to the Yokohama (Japan) and the Mare Island (California) hospitals. With the completion of the one now under contract to be erected at the naval station at Pearl Harbor, Hawaii, every important naval station will be provided with a modern, well-equipped hospital.

This extensive building program, while it cannot be said to have evolved any unique plan, has resulted in the adoption of what may be termed

the type naval hospital. It may be safely stated that, as a rule, the civil hospital is erected to meet a known demand for bed capacity, and no provision is made for an increase in size. In the military hospital, on the contrary, provision must be made for an extension of the bed capacity corresponding to an increase in the importance of the station where situated or to meet the exigencies of war. This renders it necessary that the plan selected be one which lends itself readily to expansion in ward space, and, as the administrative features are less readily extemporized than are the wards, these parts, including the commissary is excessive and maintenance unduly great; also, any considerable increase in size would produce a cumbersome institution for administration.

The plan next adopted is the one above referred to as the typical naval hospital design. Four hospitals have been erected on this plan—namely, those at Portsmouth (N. H.), Boston, Newport, and Bremerton (Wash.)—and the main features are retained in the one at the training station near Chicago and at Pearl Harbor, Hawaii.

The complete institution under this plan includes, besides the main hospital of 134 beds, a contagious disease hospital of 40 beds; a power,

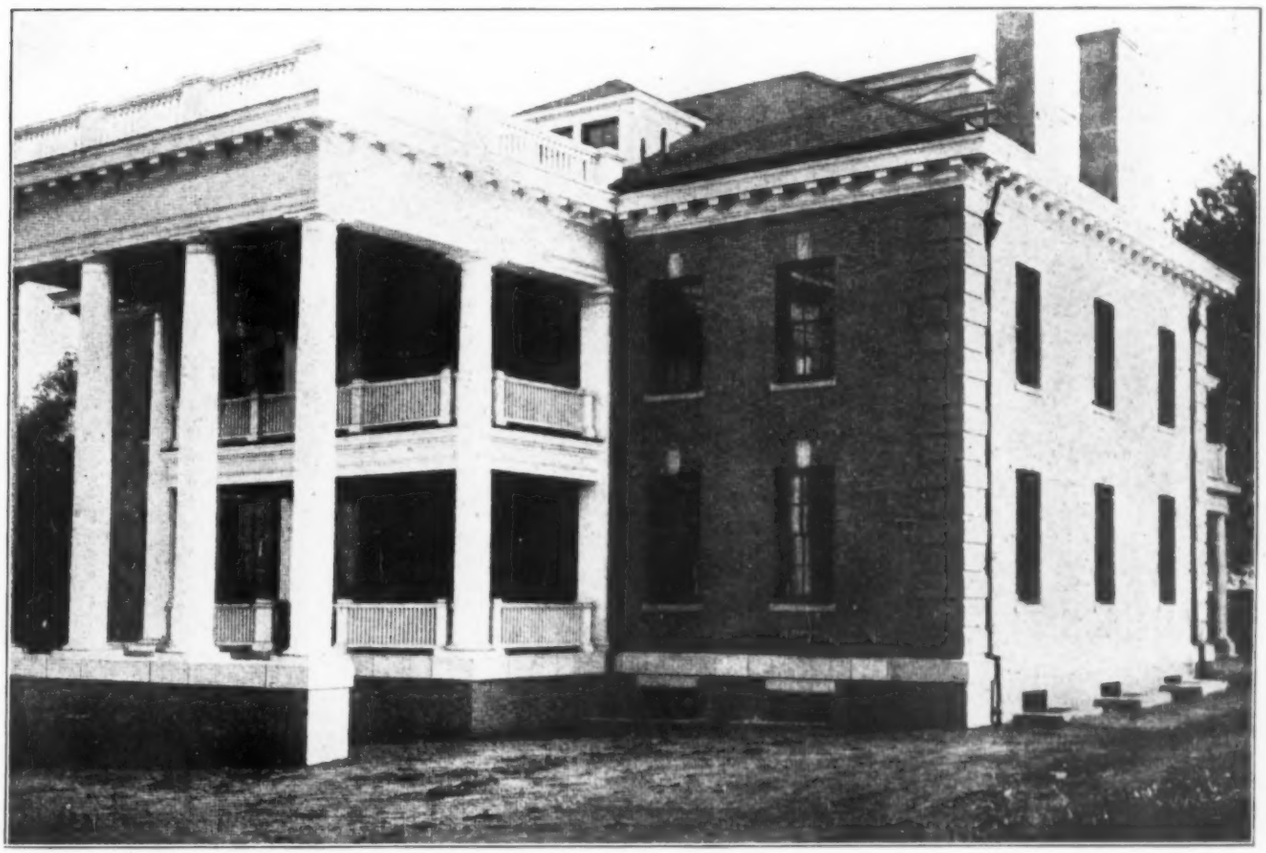


PLATE 2.

and operative departments, should be adequate for the enlarged institution. Fortunately, as a rule, the hospital reservations are ample in size, and economy in ground space by the erection of lofty structures is not demanded.

In the case of the Washington (formerly the Naval Medical School) Hospital and the one at the Naval Academy the single-story detached pavilion plan was selected, the wards being connected with a three-story administration building by an extensive system of corridors. The wards are small (sixteen beds) and, while these hospitals have many attractive features, the cost per bed laundry, and disinfecting plant; officers' quarters, nurses' quarters (where quarters elsewhere are not available); a stable and green-house. The general arrangement of the main hospital resembles a "T," the central administration portion, with the lateral wings, forming the top, the subsistence and operating building, with the solarium and connecting corridor to a rear extension of the main part, forming the vertical stem of the letter. The total frontage is 383 feet; of the administration building, 68 feet 8 inches; of the wards, 123 feet 6 inches. The wards, four in number, are in the wings, connected with the administration

building by solarium corridors. The administrative parts are sufficiently large to serve an extension of the ward space. Additional wards can be erected in the rear of and parallel with each wing, there being sufficient room for two additional wings on each side, thus increasing the total ward capacity, without serious crowding, to 500 beds. These wards would have connecting corridors to the central solarium and the central office building.

The arrangement of the remaining buildings will vary according to the space available and to topographical conditions. As a rule, the power plant and stable will be well to the rear of the main hospital, the contagious building to the leeward as regards the prevailing wind, and the staff quarters in line on one side and facing the hospital grounds. The orientation of these buildings is such as to give the maximum exposure of all parts to the sun and a northerly one to the operating department. The construction is fireproof; of structural framework; brick walls, the exterior walls a dark red; the floors and upper story ceiling re-enforced concrete; the roof of slate.

The interior is simple in finish, free from unnecessary projections, and all corners are rounded to facilitate cleaning. Partitions are of brick or terra-cotta tiles. The plastering throughout is hard plaster, that used in the operating suite, toilets, baths, disinfecting, mortuary and autopsy rooms, as well as in rooms receiving hard usage, such as the kitchens, cleaning-gear, and recreation rooms, etc., being Keene's cement plaster. Plastering elsewhere is King's Windsor cement, a hard plaster nearly as hard as Keene's. The first or scratch coat is mixed in the proportions of 1 part of Windsor cement to 1½ parts of sand. The second or brown coat is mixed in the proportions of 1 part of Windsor cement to 2½ parts of sand. The third or finish coat is mixed in the proportions of 1 part of lime to 2 parts of Windsor superfine cement plaster. The preceding three coats are used on all lathed surfaces, and the first or scratch coat is omitted from brick, terra-cotta, and concrete surfaces. The finished coat of plaster has a certain amount of lime added to give uniformity in color, but not enough to appreciably soften the plaster. King's Windsor cement plaster without lime mottles badly. The walls, where a wainscot is not provided, are painted a light buff color. A cast-iron base has been used in these hospitals, and is found to be reasonable in cost and less likely to be broken than the tiling. It is set flush with the floor and walls, and is treated as follows: one coat of red lead and oil as a

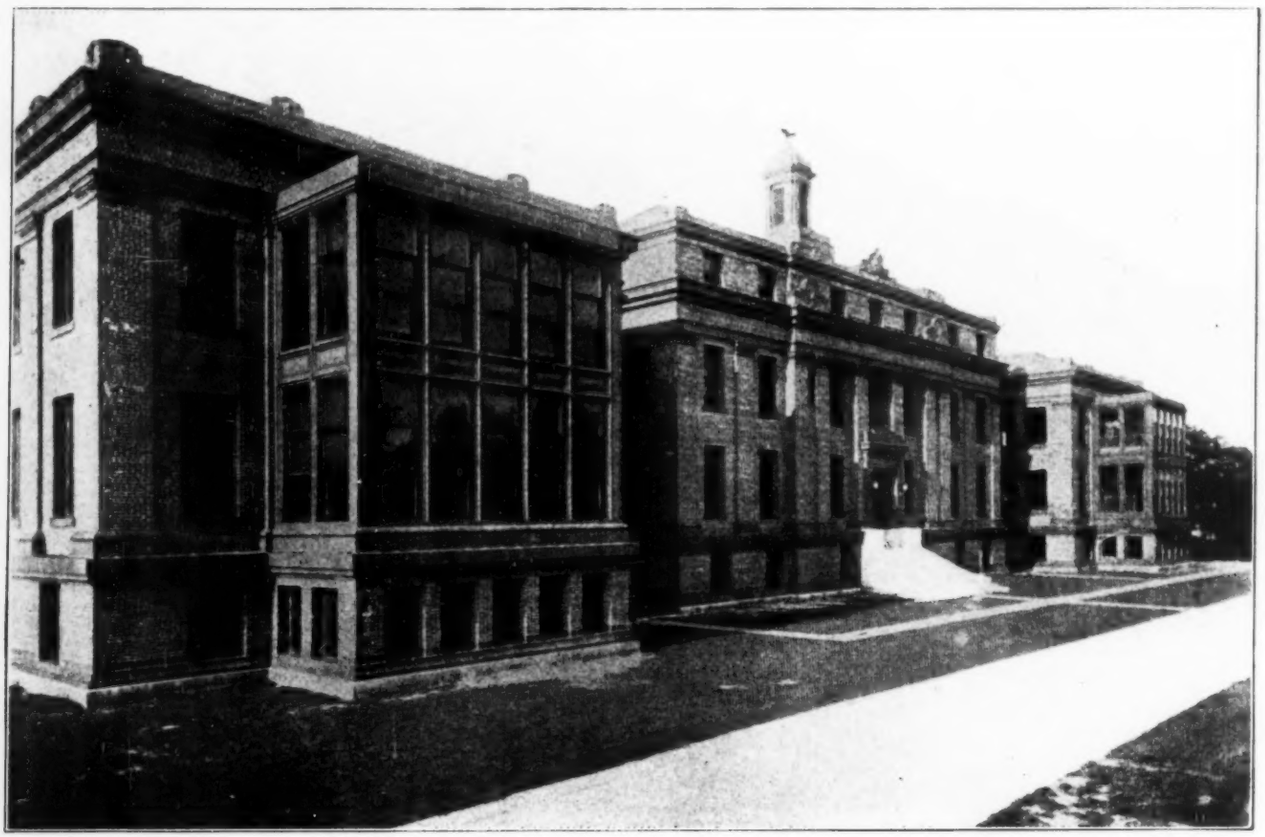


PLATE 3.

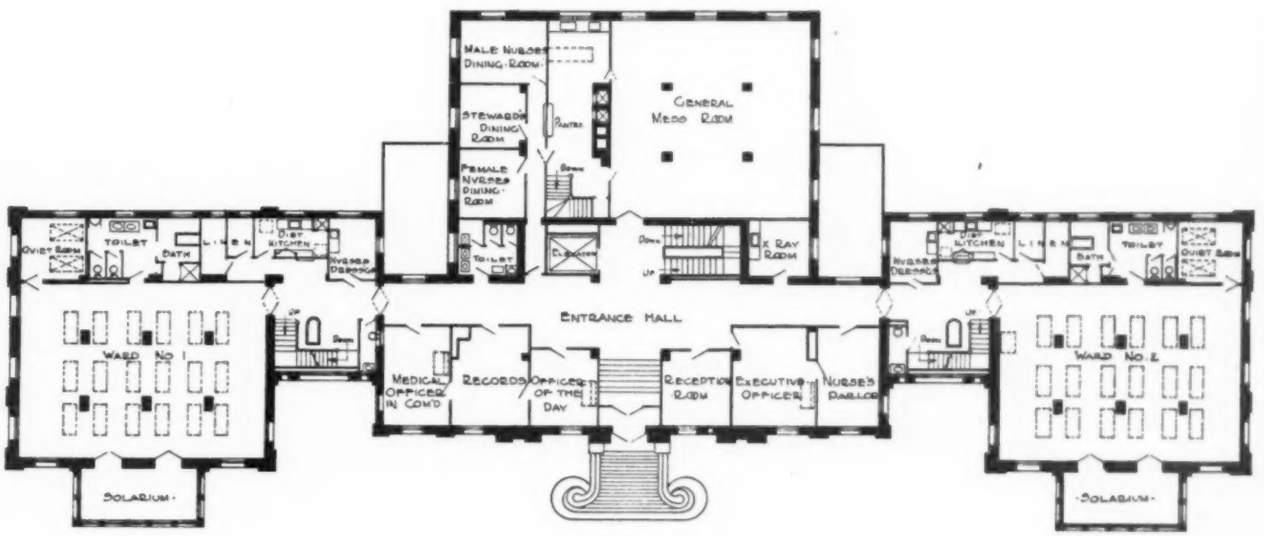
primer, two coats of lead and oil, and then one of spar varnish colored slightly. The operating suite has a 7-foot wainscot of gray Tennessee marble, and the floors are of tiles of the same material laid on nonstaining Portland cement on concrete. Gray Tennessee marble was selected on account of its durability, hardness, and fineness of texture, rendering possible the making of close joints, and also largely on account of its resistance to the chemicals in use in the operating room. White marble is less resistant to chemicals, while glass or opalite is likely to chip or spall, and is slippery. Interior doors are flush surface and the woodwork devoid of unnecessary moldings. The muntins and window sashes are especially designed to dispense with as many fillets as is possible.

satisfactory, the composition floor will probably be developed into the ideal material for institutional use.

The interior woodwork, except oak doors, has three coats of Pratt & Lambert's public building varnish rubbed to a dull finish in addition to a priming coat of shellac.

Exterior woodwork, except oak doors, has three coats of lead and oil paint, colored dark-green for pine doors, sashes, and their frames, and colored cream-white for all other exterior work.

The plaster walls in operating suite, in mortuary, autopsy, and disinfecting rooms in basement, and in baths, toilets, diet kitchens, nurses' and dressing rooms above basement have one coat of sizing, one coat of lead and oil, and two coats of Ripolin enamel, with the final coat tinted and




FIRST FLOOR PLAN.

UNITED STATES NAVAL HOSPITAL, GREAT LAKES ILL

PLATE 4.

The floors in the main kitchen, pantries, nurses' dressing rooms, toilets, the mortuary, and morgue are finished in 3-inch hexagonal vitreous tiles selected on account of their durability and hardness.

Several modern civil hospitals were visited to determine what material is best adapted for flooring in the wards, rooms generally, and the corridors, and as a result long-leaf yellow pine, quarter-sawed, heart-stuff, was selected as being reasonable in cost, remaining well in place and taking a fine finish. While maple is harder, it has a tendency to curl; terrazzo is suitable over small areas only, as it has a tendency to crack, is noisy, and tiring to the feet. Linoleum well laid and turned up at the walls to form a cove is very satisfactory, but is expensive, and if poorly laid tends to buckle and open at the joints. While not yet entirely

rubbed to a dull finish. The woodwork, except doors, in these rooms has a coat of shellac as a primer, one coat of lead and oil, and three coats of Ripolin enamel, with final coat tinted and rubbed to a dull finish. The metal doors in operating suite have a mineral primer and two coats of white japan baked on and rubbed to a dull finish. The wood doors in these rooms are varnished as above noted for interior woodwork.

Basement walls and ceilings, not otherwise treated and except where they are face brick, and walls and ceilings in all cleaning-gear closets are painted with two coats of Keystona. All surfaces in x-ray and photography rooms have three coats of dull black paint. Wood floors and wood stairs are finished with three coats of Boyle's old English floor wax.

In the basement beneath the central building

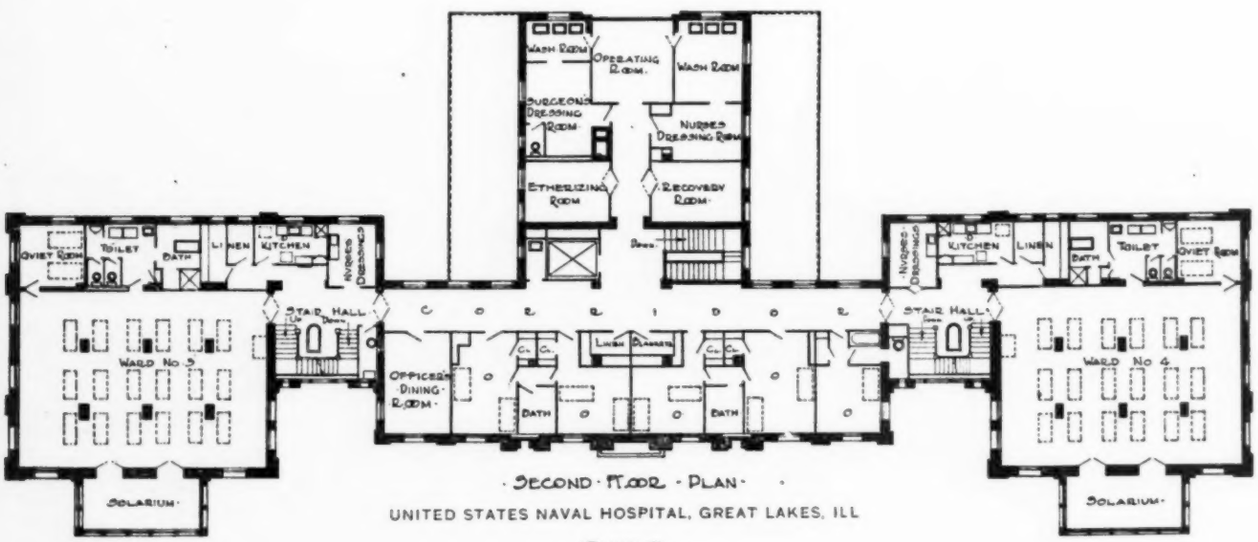
are three dining rooms for attendants, serving rooms, the heater and fan room, the elevator shaft and machinery, and a closet for cleaning gear. This latter room and similar ones elsewhere have special provisions for the sterilization of mops and utensils used in cleaning. The dispensary, with an adjoining storeroom, is located in the front part of this basement.

The basement of the right wing contains a recreation room, a library, a hydrotherapeutic room with an adjoining lounging room, a serving room with a dumb-waiter to the wards above, a linen room, a bag and hammock, and other storerooms.

In the basement of the left wing at the extreme end is a mortuary and an autopsy room completely tiled and drained. The entrance to these rooms is from the exterior of the building. Adjacent to the above are cells for prisoners and the insane, for whom are provided special toilets and lavatories, the whole being separated from other parts of the hospital by strong wire netting. The remaining space is occupied by the x-ray, developing, disinfecting, and storerooms. In the rear, at the junction of these rooms with the main building, is a room to receive the soiled linen from the wards above through a chute. This room has an exterior door only, to prevent possible infection of the basement and to afford easy access to the infected end of the disinfecting plant. It was the intention that all soiled linen should be packed in canvas bags before they are dropped down the chutes. In the illumination holophane globes are used to throw the light and distribute it as required.

For wall brackets, asymmetrical globes No. 295 were chosen; for ceiling fixtures for general use, intensive globes No. E-3363; for operating rooms, for rooms for general dressings and for autopsy, intensive globes No. 1-9. The height of wall brackets is 7 feet above floor; of ceiling lights, 8 feet 6 inches to globes; of operating room lights and lights in rooms for general dressings and minor surgery, 8 feet to globes. Fixtures are of drawn brass, simple in design, and of substantial character. The wall brackets finish closer to the walls than the usual fixture and the asymmetrical globe throws the light out into the room. All fixtures are arranged for the use of Tungsten lights.

The main entrance to the hospital on the first floor of the administrative portion is reached by broad granite steps, on each side of which is an ornamental pedestal light. The area at the top of the steps is tiled and has Luxfer prisms inserted to give light to the basement rooms below.




SECOND FLOOR PLAN

UNITED STATES NAVAL HOSPITAL, GREAT LAKES, ILL.

PLATE 5.

Access to the entrance corridor is through two double swing doors and a rubber-tiled vestibule. From the entrance, corridors extend to the solarium and subsistence building in the rear and laterally to the wards. Forward of the latter, to the right of the entrance, are the offices for the medical officer commanding and the record clerks; to the left those for the officer of the day and the executive surgeon. In the rear extension is the board or examination room; a room for treatment of diseases of the eye, ear, and throat; the laboratory, and quarters for a junior medical officer or the officer on duty. An alcove adjacent to the elevator serves as a reception room.

The second and third floors are assigned to sick officers, for whom fifteen rooms are provided. As a rule there are lavatories between each two rooms. The officers' dining room is on the second floor, and a large recreation room is situated on

the third floor. Serving and dressing rooms are provided on both floors.

The subsistence-operating building is 72 feet to the rear of the central executive portion, and connected on the basement and first and second floors by corridors inclosed by glass, which are expanded at the middle portion into solaria. The third-floor corridor communicates with the main building, and, aside from the canopy over the central portion, is entirely open for the treatment of cases requiring outdoor living. In the basement of this building is the main kitchen, cold storage room, storerooms, serving room, and a blower room. The kitchen is large, completely tiled, and supplied with the most improved culinary appliances. The

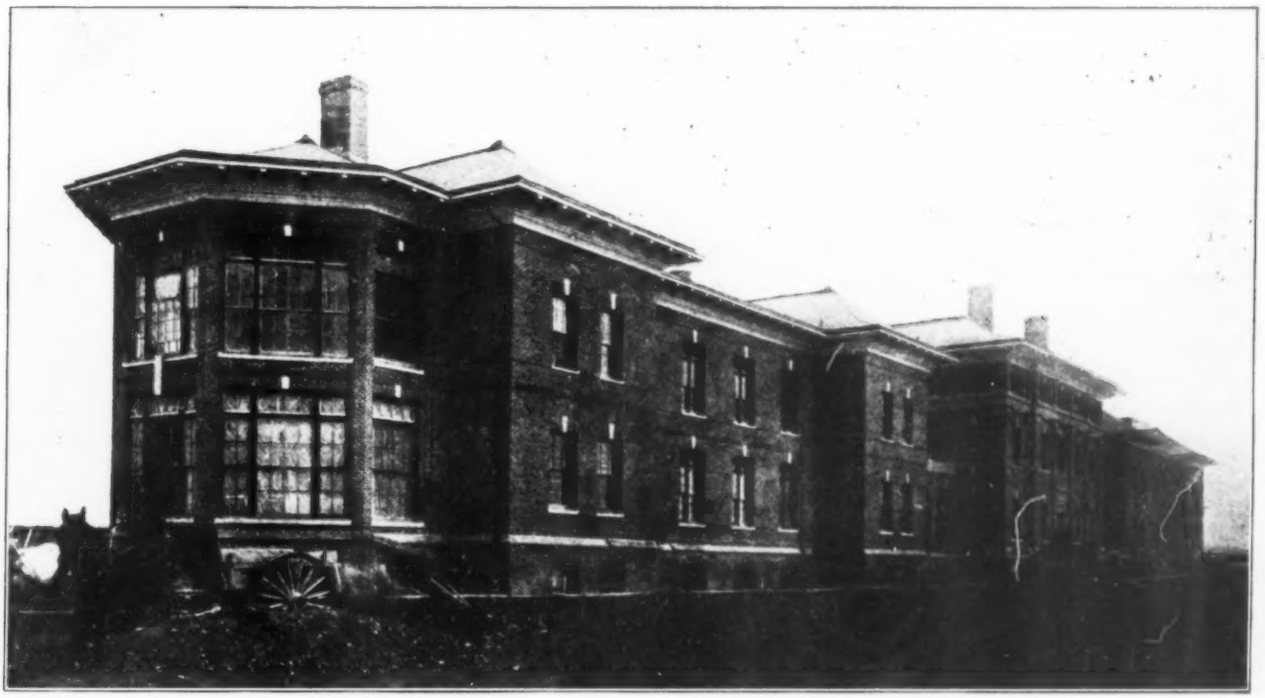


PLATE 6.

diets are transferred to the general mess room above by a dumb-waiter and to the serving room in the basement by metal food carriages.

On the first floor are the main mess room for the convalescents and nursing force, a pantry, and dish-washing room. The latter is equipped with a mechanical dish washer.

The second floor is occupied by the operating department, the arrangement of which is varied in four hospitals to give the most desirable exposure to the operating rooms. In addition to the general operating room are provided a general dressing or minor surgery room, a cystoscopic room, surgeons' dressing and preparation rooms, nurses' preparation room, sterilizing, anesthetizing, and recovery room. The operating rooms have lateral and ceiling sky-lights. Artificial light is provided by five 50-candlepower electric lights with holophane reflectors, so arranged as to prevent the casting of shadows on the field of operation.

The equipment is complete in every detail; the plumbing is of the latest design; all faucets and drains are provided with knee-action valves. The drains can be flushed with boiling water. All plumbing fixtures and fittings throughout were chosen with especial care, and are of simple, durable patterns. The exposed metal fittings are of "red metal" composed of not less than 70 percent of copper. Red metal can be polished and worn indefinitely and still show the same color. Nickel plate will sooner or later wear off in places, leaving unsightly spots. Volume valves are used on all lavatories, sinks, and baths to control the flow of water, in addition to the usual faucets, to prevent spattering walls and floors by the full, quick opening of the faucets.

The wards have a normal capacity of 26 beds, allowing 92 square feet of floor and 1,250 cubic feet of air space per patient. In addition there are four one-bed quiet rooms connected with each ward, located two on each side of the ward near its outer end. These rooms have double hollow tile partitions and double doors to exclude sound.

The solarium is at the outer end of the ward, embracing its entire width, and is inclosed in glass on three sides. Additional solarium space

is provided by a loggia between the ward and the administration building in front of the corridor. The wards are bright, having 14.8 square feet of glass per bed.

The utility rooms are at the inner end of the ward, opening on the entrance hall. A fireplace at the outer end of the ward assists in ventilation and adds to the cheerfulness.

In accordance with modern practice, two systems of heating are employed—direct and indirect from a hot-water system and indirect by means of the plenum system of ventilation. The hot-water system is calculated to maintain a temperature of 70° F. in zero weather. Direct radiators are provided for the wards, and direct-indirect radiation for rooms not provided with forced ventilation.

The mechanical combined heating and ventilation plant consists of two units—one supplying 3,000 cubic feet of washed air per minute to the subsistence and operating building, the other supplying 3,400 cubic feet per minute to the administration building and wards. The latter supply is passed through a fine screen to remove debris, but is not passed through a water air washer. The air is passed over tempering steam coils, which heat the air, when required, to 45° before passing to the fan; there it is passed over a reheating coil and the temperature raised to 75° F.

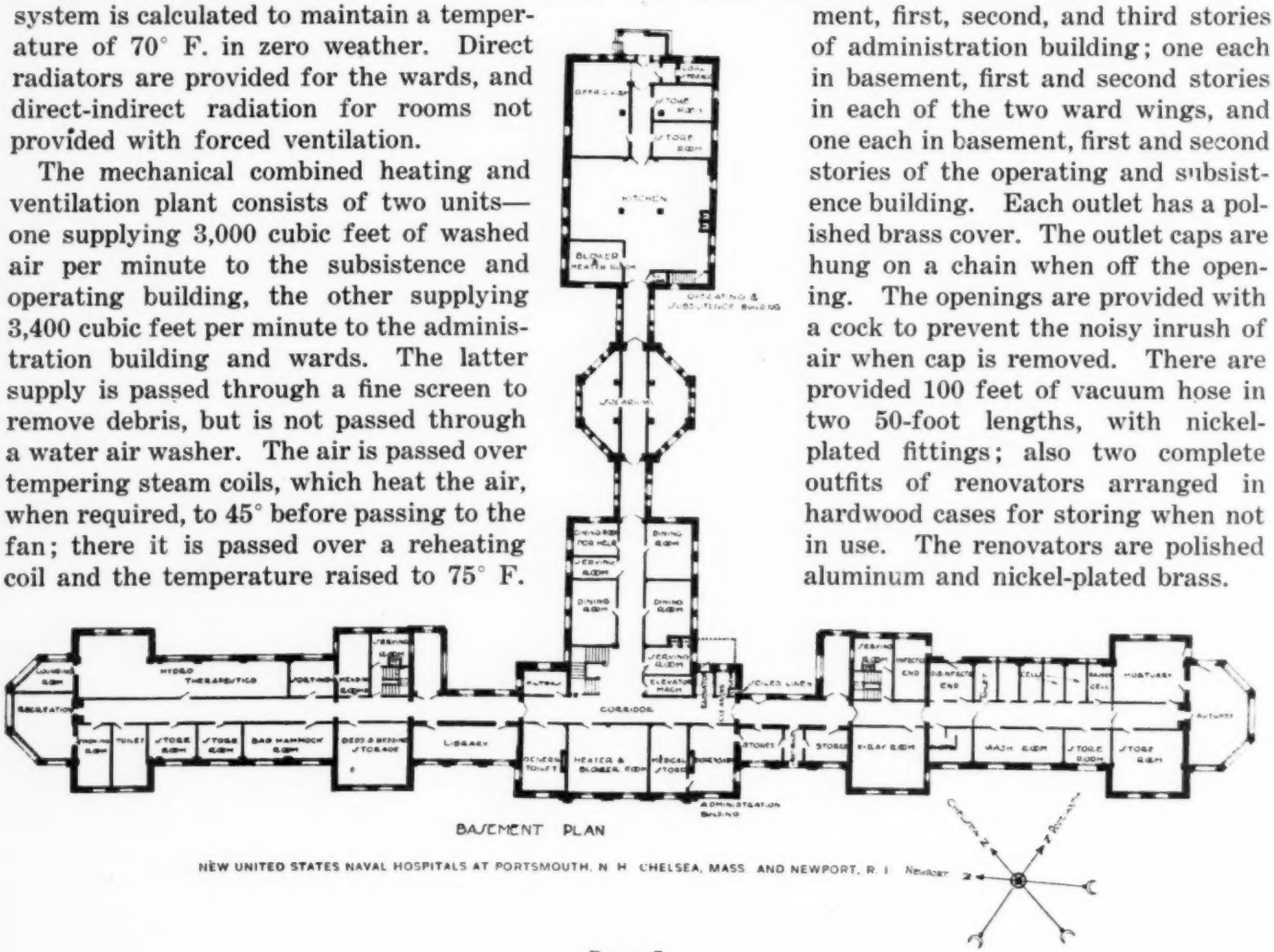



PLATE 7.

The regulation of the heating coils and also of the damper to a by-pass allowing admixture of cold air with the heated air is under thermostatic control from the living spaces. The hot-air ducts open into the wards 8 feet above the floor. Four exhaust blowers, located in the attic over the wards, administration building, and operating building, are connected by ducts with registers 1 foot above the baseboard. By this method the heated fresh air enters high up and becomes disseminated, cools, and gradually falls, passing out at the exhaust registers near the floor.

The hospitals are provided with intercommunicating telephones, fire-alarm boxes, and gongs. A special fire pump is provided to afford ample pressure under all conditions.

The water supply, other than for fire and sanitary purposes, is passed through a Loomis-Manning water filter of a capacity of 18,000 gallons per diem.

The vacuum cleaning system consists of a vacuum equipment located in the heater and blower room in the basement of the administration building, with thirteen 1-inch outlets located at central points, as follows: one each in basement, first, second, and third stories of administration building; one each in basement, first and second stories in each of the two ward wings, and one each in basement, first and second stories of the operating and subsistence building. Each outlet has a polished brass cover. The outlet caps are hung on a chain when off the opening. The openings are provided with a cock to prevent the noisy inrush of air when cap is removed. There are provided 100 feet of vacuum hose in two 50-foot lengths, with nickel-plated fittings; also two complete outfits of renovators arranged in hardwood cases for storing when not in use. The renovators are polished aluminum and nickel-plated brass.

The separator is the latest automatic type, which cleanses the dust-laden air by drawing it through a body of water which is changed at intervals automatically, the interval of change being regulated according to the amount of work being done by means of the admission valve on the water pipe. A glass peephole on the front of the separator gives a view of the contents as a check on the adjustment of the rate of flow.

The vacuum pump is of the double-acting, reciprocating vertical type, driven by a 7½-horsepower motor, with silent chain drive, all mounted on one base. The pump has a cylinder 13 inches

in diameter, with a stroke of 6 inches, and displaces 160 cubic feet of free air per minute with 175 revolutions.

An independent switchboard is provided for this equipment, and the system is provided with an unloading device which regulates the flow of current to the motor, thereby maintaining a practically constant vacuum under the varying load.

The calculated normal bed capacity is 14 beds for officers and 120 beds for enlisted men in each hospital, making the average cost per bed of $2,122. The estimated emergency capacity of the hospital is 184 patients.

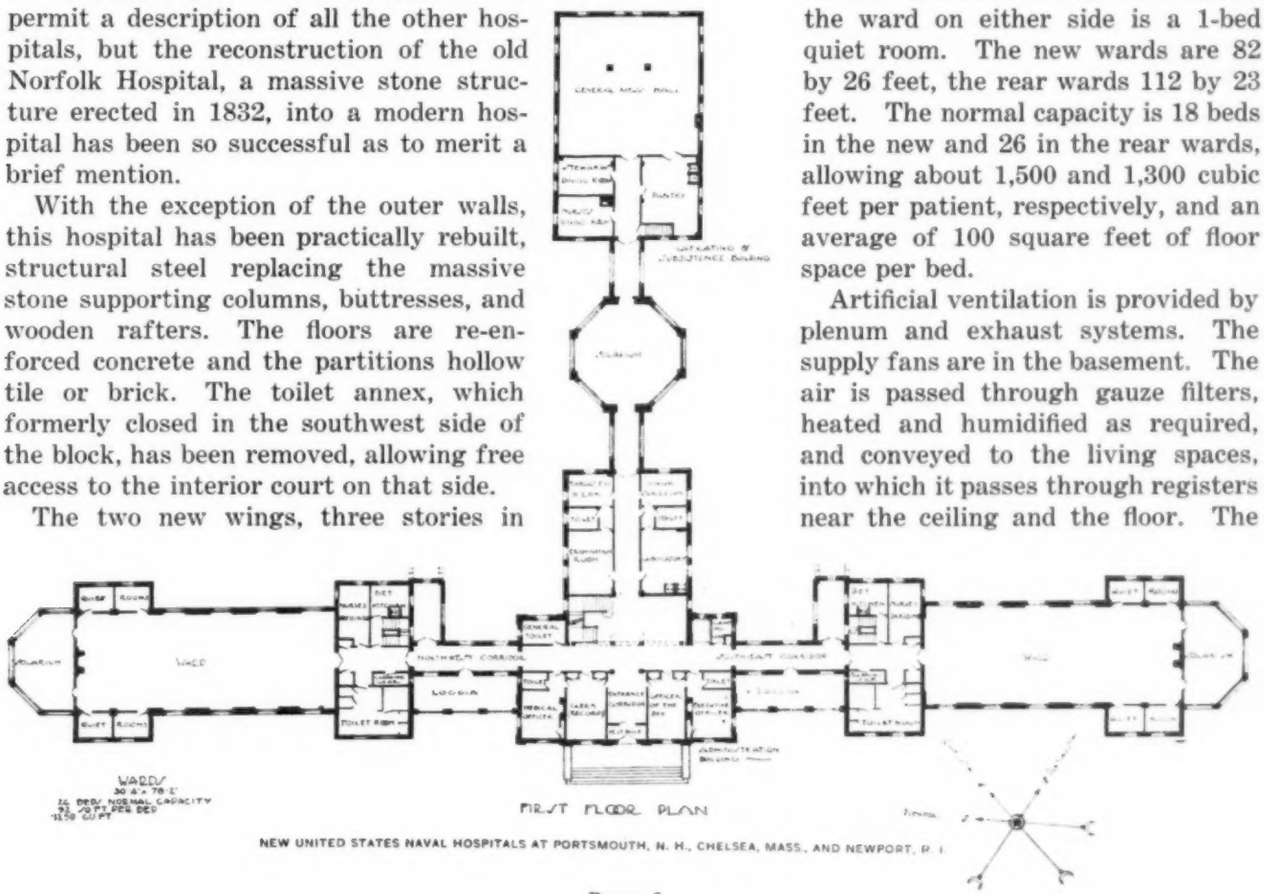
The limitations of this article do not permit a description of all the other hospitals, but the reconstruction of the old Norfolk Hospital, a massive stone structure erected in 1832, into a modern hospital has been so successful as to merit a brief mention.

With the exception of the outer walls, this hospital has been practically rebuilt, structural steel replacing the massive stone supporting columns, buttresses, and wooden rafters. The floors are re-enforced concrete and the partitions hollow tile or brick. The toilet annex, which formerly closed in the southwest side of the block, has been removed, allowing free access to the interior court on that side.

The two new wings, three stories in height, built of brick, stucco-covered to resemble the older construction, project laterally from the front portion at the junction with the rear wings. The central or front portion of the former block contains the administrative offices, sick officers' rooms, and, on the recently added fourth, the operative department, which is accessible by a stairway and an elevator located on each side in the angle formed by the junction of the rear wing and the front portion. The entrance for ambulance cases is directly from the court in the rear to the elevators. This department comprises an operating room 25½ by 19½ feet, a surgeons' dressing and preparation room, a nurses' preparation room, an instrument and dressing room, sterilizing, anesthetizing, and recovery rooms. The operating room has both overhead and lateral illumination. The entire suite of rooms has a floor of white vitrified tiles 4½ inches square and a 6-foot wainscot of the same material. The walls and ceilings are of Keene's cement, covered with white enamel.

The wards, 12 in number, 3 in each wing, are practically similar. The utility rooms, consisting of a diet kitchen, toilets, and a nurses' or dressing room, occupy the near end. At the further end in a lateral extension of the ward on either side is a 1-bed quiet room. The new wards are 82 by 26 feet, the rear wards 112 by 23 feet. The normal capacity is 18 beds in the new and 26 in the rear wards, allowing about 1,500 and 1,300 cubic feet per patient, respectively, and an average of 100 square feet of floor space per bed.

Artificial ventilation is provided by plenum and exhaust systems. The supply fans are in the basement. The air is passed through gauze filters, heated and humidified as required, and conveyed to the living spaces, into which it passes through registers near the ceiling and the floor. The exhaust fans remove the air from the collecting chambers in the attics. The diet kitchens are provided with electric ranges, steam plate and food warmers, refrigerators, and dressers. All furniture in the linen lockers, dispensary, dressing rooms, and wards is of metal.




NEW UNITED STATES NAVAL HOSPITALS AT PORTSMOUTH, N. H., CHELSEA, MASS., AND NEWPORT, R. I.

PLATE 8.

The navy has at present but two tropical hospitals, one at Canacao, near Cavite, Luzon, and the other at Guam, Mariana Islands, the latter being an insular hospital for the natives as well as for service use.

The Canacao hospital has a total capacity for about 200 patients. Erected in 1903–4, this hos-

pital, which is constructed of wood, has its stability seriously threatened by the ravages of the white ant, showing the inadvisability of using this material for tropical construction where this insect exists.

The projected hospital at Pearl Harbor, near Honolulu, is to be constructed of hollow tile and concrete. The general arrangement of the various units is similar to that of the type hospital, but more extended. Each ward unit will be surrounded by a wide veranda, and as additional pavilions are added they will be in the rear, but will partially project laterally beyond the one in front. This arrangement allows all the wards to have the cooling effect of the prevailing breeze, but, should it result in an undue lateral expansion, the echelon may be reversed, making the general outline lozenge shaped.

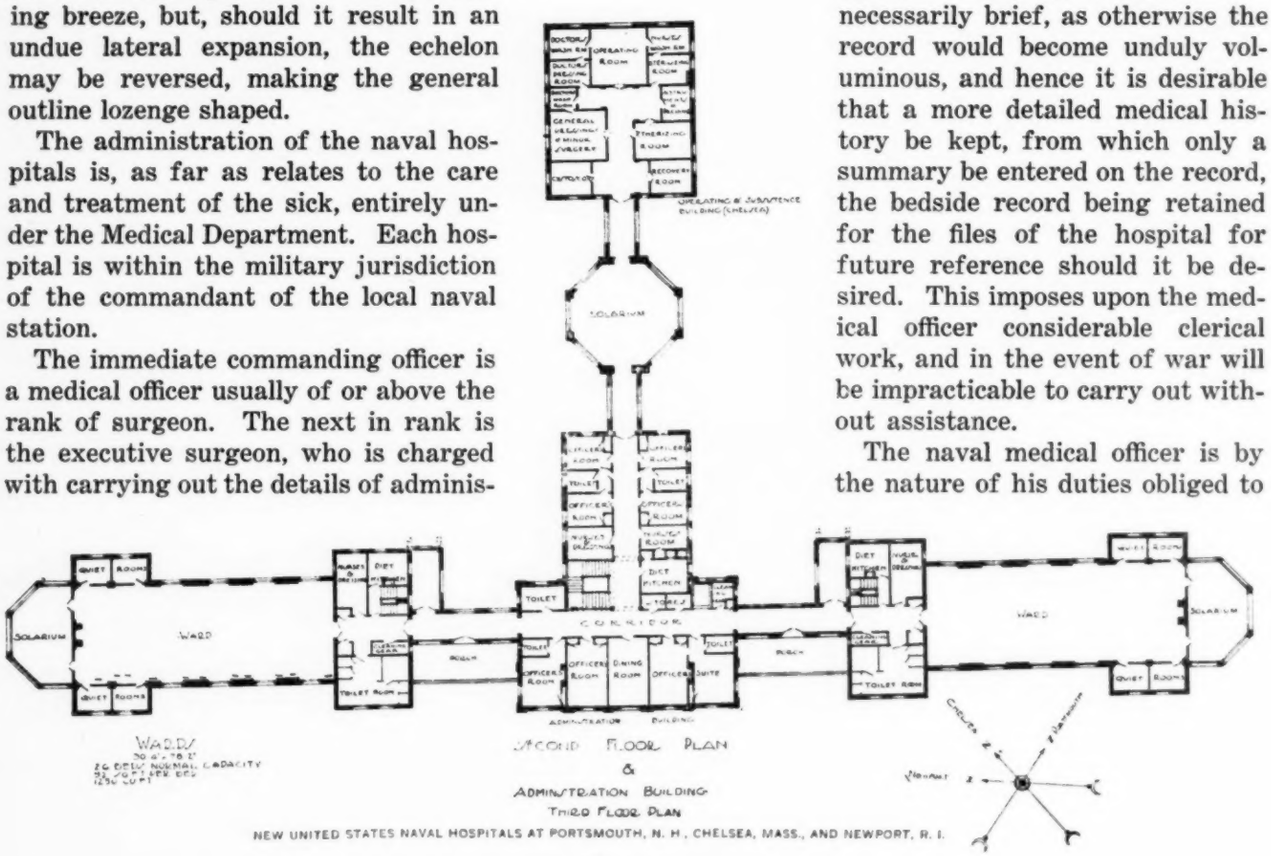
The administration of the naval hospitals is, as far as relates to the care and treatment of the sick, entirely under the Medical Department. Each hospital is within the military jurisdiction of the commandant of the local naval station.

The immediate commanding officer is a medical officer usually of or above the rank of surgeon. The next in rank is the executive surgeon, who is charged with carrying out the details of administration and general supervision of the care of the sick. The direct care of the sick comes under the ward officers, to each of whom, as a rule, not more than 50 patients are assigned. In the larger hospitals or under special conditions a special detail as operating surgeon, for eye, ear, and nose work, or in charge of the laboratory, is made.

The officers junior to the executive surgeon, other than those detailed as above, alternate on duty as officer of the day, who is responsible for the carrying out of the routine, the admission and discharge of patients, and the supervision and emergency treatment of the patients in the absence of the regular ward officer. As there are no interns, the ward officers are required to keep not only the medical history of cases, but also keep the official health record. This latter is a succinct record of all disabilities occurring during the service of each person in the navy and marine corps, accompanying the individual when transferred. While primarily intended for the purpose of determining the right to a pension, it is of great value to the medical officer in that it affords valuable assistance both in diagnosis and treatment. It is so arranged that medical history sheets may be added, the whole eventually being filed in the Bureau of Medicine and Surgery. The entries in the health record are necessarily brief, as otherwise the record would become unduly voluminous, and hence it is desirable that a more detailed medical history be kept, from which only a summary be entered on the record, the bedside record being retained for the files of the hospital for future reference should it be desired. This imposes upon the medical officer considerable clerical work, and in the event of war will be impracticable to carry out without assistance.

The naval medical officer is by the nature of his duties obliged to be a general practitioner in its broadest sense, as, in addition to having a thorough working knowledge of the diseases common to this country, he is obliged to be familiar with tropical diseases and to be a naval hygienist as well.

It is, therefore, desirable that officers alternate in the character of their hospital service, and too much specialization cannot well be encouraged. On the other hand, specialists are required in limited numbers for certain stations, as Washington, the Naval Academy, the larger hospitals, and at the Naval Medical School and on board hospital ships, and to a limited number who exhibit special




NEW UNITED STATES NAVAL HOSPITALS AT PORTSMOUTH, N. H., CHELSEA, MASS., AND NEWPORT, R. I.

PLATE 9.

capabilities in certain lines are given every opportunity the service affords to perfect themselves.

The nursing is performed by the navy nurse corps, assisted by the hospital corps. The former is composed of selected graduate nurses of civil training schools, the latter of enlisted men specially selected for this duty. The hospital corpsmen receive their primary training at the naval training station and on board ships, being transferred to the hospitals for further instructions and to attend to cases to which the female nurse cannot properly be assigned.

The nurse is in military charge of the ward, and the hospital apprentice is subject to her orders. While this arrangement is at times causative of friction, yet, on the whole, both parties adapt themselves well to the conditions—the hospital corpsman appreciates the value of the instruction and the nurse recognizes that the hospital corpsman is much more than an orderly.

The cleaning (other than the wards), cooking, and outside work is done by civilian employees.

The maintenance, and in recent years much of the cost of construction, has been defrayed from the naval hospital fund, which is derived from a checkage of 20 cents per month on the salary of every one in the service, all fines imposed by court-martial, forfeitures of pay on account of desertion, the pensions of those patients in a naval hospital, and an allowance of 30 cents, the commuted value of the ration a day for each person in the hospital.

Supplies other than those required in emergencies are obtained upon contract, made upon requisition, by the Bureau of Supplies and Accounts. All construction and extensive alterations are under the supervision of the Bureau of Yards and Docks upon plans approved by the Bureau of Medicine and Surgery. These arrangements relieve the medical department from the responsibility for the purely technical details of construction and purchasing and the incidental bookkeeping, while still leaving with it the general designing and selection.

The clerical force, composed of members of the hospital corps, is directly under the charge of the pharmacist, who is responsible for the bookkeeping in addition to his duties as commissary. The inventory of property is kept on cards, a dual system being used—one to check up receipts and expenditures, the other to show to whom or where issued.

In relation to the cost of maintenance, it is difficult to form a comparison with that of civil institutions. The naval hospital has a fully salaried staff, which must at all times be equal to the maximum demand on the capacity of the hospital, the civilian employees are well paid, as are all government employees, while in the civil hospital but few on the staff are given a salary, and, if a training class is maintained, much of the nursing is secured for a nominal sum. Furthermore, the service is distributed among a considerable number of institutions in the navy, each of which has to have all the equipment of a much larger hospital.

The average per-diem expenditure per patient in eight of our principal hospitals within the continental limits of the United States was, in 1912, 96 cents for total maintenance and 50 cents for subsistence, excluding salaries.

The ambulance service, exclusive of depreciation, was $1,500 per annum. The motor ambulance is being supplied to all stations. The latest model is fitted to carry the wire-splint stretcher devised by Surgeon General C. F. Stokes, U. S. Navy, which has the advantage of lightness and convenience in handling in confined spaces, is compact, and can be stored in nests of three. In case of need, this ambulance can carry six loaded splint stretchers inside—four suspended from springs, two on the floor, and one on each side of the body secured on brackets.

In regard to the surgical service, there cannot be said to be any more uniform methods employed in technic than exists in civil life. Operators have their idiosyncrasies, but it is evident that the dry iodin method of skin disinfection is the favorite, and the results justify the selection.

Ether is the usual anesthetic employed for the reason that it is the safest in the hands of the average anesthetist, and, with few exceptions, that is the best we can have with a constantly changing personnel. Nitrous oxid has been in use in several hospitals during the last three years, and the Norfolk hospital gives very favorable reports on it, but at others, although no fatalities have occurred, it is viewed with distrust. It requires a more or less cumbersome apparatus, which, with the difficulty in renewing the supply of gas, renders its use at sea impracticable. It is better to train our anesthetists ashore in the use of the anesthetic which they must use when afloat.

The responsibilities of the medical department are not fully met by providing for the requirements of the times of peace, but must anticipate the demands of war. It is possible that any coastwise naval hospital may become the evacuation or base hospital for the fleet after a decisive battle, and may have to receive as many as 5,000 to 10,000 wounded.

It is beyond the bounds of possibility that the state of preparedness of this country for war will

ever be such as to provide an extensive equipment at every naval station, but certain places like the Norfolk, the Mare Island, and Pearl Harbor (Hawaii) stations have been selected for base hospitals, and complete plans are being made for the erection of temporary additions to the local hospitals to bring their capacity up to 10,000 beds in the case of hostilities. These plans even extend to the number of the personnel required.

With the limited number of officers in the medical corps and the small hospital corps, both of which would be inadequate to supply the combatant ships, it will be necessary to call upon the Naval Medical Reserve Corps and the National Red Cross Society.

Owing to their familiarity with the administrative features of the hospital service, the regular medical officers will occupy the executive positions to a great extent.

In conclusion, it may be stated that with the completion of the present building program the navy may well feel proud of the provisions for the care of the sick and injured during the piping times of peace, and that as far as it rests with the medical department it will not be found unprepared for war.

## THE PASSING OF "THE HOSPITAL UNIT."

### The Hospital Unit a Minor Factor and Can No Longer Be Regarded the Central Feature of Hospital Planning.

By S. S. GOLDWATER, M. D.

SUPERINTENDENT MOUNT SINAI HOSPITAL, N. Y.; MUNICIPAL EXPERT IN HOSPITAL CONSTRUCTION IN THE DEPARTMENT OF BELLEVUE AND ALLIED HOSPITALS OF THE CITY OF NEW YORK.

IN the presentation of the principles of hospital construction, as well as in the criticism of hospital plans, writers frequently begin and not infrequently end with a study of the characteristics of the hospital unit. Dr. Holmes is in good company, but he is nevertheless wrong when he declares that "it (i. e., the hospital or ward unit) is by far the most important of all subjects that we have to deal with in modern hospital construction," for the hospital unit may be perfect as a unit and the hospital totally inadequate as a hospital. The value of a hospital is proportionate to its realization of an ideal hospital scheme. Hospital planning, therefore, must have an eye to the realization of a perfect plan of hospital organization, which is precisely what the exponent of the hospital unit overlooks.

The need of the hour is to raise hospital criticism to a level where it will no longer be content to utilize, as its most important instruments, simple standards of floor and wall and window space; where it will cease to accept or condemn a plan because of the presence or absence of sanitary towers (I refer to the English school of criticism); where it will not naively continue its time-worn and, at present, superfluous defense of sunlight, fresh air, and cleanliness.

The hospital critic should argue from the standpoint of one responsible for the organization and equipment of a hospital designed to meet promptly, efficiently, and economically all the medical needs of all possible patients. A hospital of this kind will necessarily follow the rules of hygienic house-building; will make proper provision for its workers; will provide suitable equipment for its physicians, nurses, and attendants; but, besides this, it will place the members of its varied staff in such relation to each other as to insure their constant mutual support. A hospital plan which fails in any respect to fulfill the requirements of an ideal hospital organization fails, to that extent, to justify itself, no matter what the intrinsic merits of its ward unit.

My contention is that we can no longer afford to treat the "hospital unit" as the central feature of discussions on hospital planning. What is needed nowadays is rather a statement of the proper characteristics of the hospital as a whole. So vital is the need that a censor of hospital literature, if there were one, would be justified in forbidding for a decade the publication of any article on hospital affairs which failed to express some general thought on the essential characteristics of the complete hospital. It is true that a censorship so exercised would cause the temporary suppression of useful suggestions concerning details of ward arrangement and construction, but the resulting loss would be temporary and trifling, and in the meantime our ideas would have become broader and more fruitful, gaps in current thought and practice would have been filled in, and there would have developed a hospital literature possessing a scientific value hitherto rarely attained.

In the new order of writing here proposed the hospital unit, the hospital ward and its accessories or dependencies, would no longer appear as a sort of miniature hospital, the simple multiplication of which need only be considered in the planning of a large hospital, all matters besides holding a

merely incidental and subordinate place in the general hospital scheme. Hitherto the hospital unit has thus dominated our thought and practice; in consequence hospital development has been retarded. Hereafter we must regard the hospital unit as a minor factor in a great correlation of parts which, functionating together, make up the healthy, growing life of the complete hospital. With the hospital unit filling our vision, we have been unable to perceive that the country is covered with a multitude of incomplete hospital fragments, immature and relatively ineffectual institutions, which are erroneously dignified by the title of "hospital" or even "general hospital." This condition has been tolerated because the study of hospital planning has been pursued apart from that of hospital organization; yet the best in hospital construction can never be attained until our notions of hospital organization are clarified and developed. It is our ideas of hospital organization at its best that the hospital building must body forth.

Let me give a few illustrations of the overshadowing role which the hospital unit has hitherto played in hospital literature.

"The ward with its necessary adjuncts," says Galton, "is the central unit of hospital construction; the form of the ward will govern the central features of the hospital. . . . The ward is a small hospital, which would require only certain administrative additions to make it complete. It forms a basis for any hospital. . . . A large hospital of any required size might be formed by the addition of similar units." The same writer, undertaking to define a hospital, declares that "the shape of the wards is the first point to be settled." If Galton had the faintest conception of the vital interdependence of the numerous branches of modern medicine, he failed to show it in his otherwise helpful book.

But Galton was primarily an engineer and sanitarian, from whom it may be unreasonable to demand an understanding of the principles of medical administration. One turns, therefore, in the spirit of hope to a monograph entitled "The Meaning of a Modern Hospital," written ten years after the publication of Galton's book, by W. Bruce Clark, surgeon to St. Bartholomew's Hospital. "A good hospital," says this writer, "so far as its construction is concerned, may be summed up in two words—ventilation and sunlight—and all methods of construction aim at making these as perfect as possible. The first point to be considered is the ward in which the patient is treated. Its shape, size, and surroundings form the keynote to the hospital system. The term ward unit implies the application of standard sizes to the construction of a hospital. . . . The aggregation of a number of ward units forms what is called the pavilion or separate building, which is complete in itself; and it is the aggregation of a number of pavilions, usually of equal size, which form the hospital."

Clark does finally arrive at the point of considering the grouping of ward units together, but his conception of ward grouping is purely that of the hospital builder. "It is permissible," in his opinion, "to group five ward units, under certain conditions, on the top of one another." The pavilions are to be supplemented by isolation blocks, operating theaters, pathological department, residents' and nurses' quarters, and out-patient department; and, in order that the "various departments that have been referred to may be worked harmoniously, expeditiously, and economically, there must be some one at the head of affairs ever ready to correlate them, so that the highest efficiency may be obtained and no waste be permitted." The writer thus concludes his essay without arriving within hailing distance of the real "meaning" of a modern hospital. The only correlation to be thought of, according to Clark, is that which an able superintendent may be able to introduce and maintain, and it is to the correlation between ward units and administrative departments that the superintendent is to address himself. To the basic need of the correlation of clinical departments, to the importance of planning a hospital with relation to the fundamental principle of clinical cooperation, Clark does not allude.

Is it not futile to expect the hospital architect, beginning from the point of departure of the hospital unit as conceived in the writings just quoted, to gain any idea of those factors in hospital organization which are indispensable to the highest clinical achievement, and which should therefore determine the character of a hospital plan? The truly "modern hospital" will not be content to provide for its patients clean and wholesome surroundings, suitable nursing appliances, the machinery of domestic administration, therapeutic apparatus, and means for the scientific investigation of disease. What is most characteristically "modern" in the efficient hospital of today (and in this sense hospital efficiency is almost unknown in this country) is a clinical organization so composed as to insure prompt and effectual attention to any disease or combination of diseases that may threaten life or health. The keynote of modern medicine is cooperation. To study the hospital unit, looking neither to the right nor to the left, is to suffer ourselves to be led away from and not toward this vital principle. Hospital planning which ignores the possibilities of cooperative

medical practice is unworthy and unfit for the object to be attained.

The plan which begins with the conception of the hospital unit rarely proceeds far from its starting point; this could readily be shown by the citation of numerous examples, some of which will immediately occur to any reader who is at all familiar with the American hospital field. Such a plan contemplates a few of the hospital needs of a small group of patients; it concerns itself with such simple desiderata as sufficiency of air space, proper ventilation, exposure to the sun, cleanliness, the disposition of body wastes, the preparation and distribution of food, the recreation of the convalescent—requirements which may be and have been provided for, while the finer and broader opportunities of modern hospital work are disregarded. To emphasize the ward unit in hospital planning is to place emphasis where emphasis is no longer required. The very simplicity of the thought involved insures its ready acceptance by architects and lay committees, and is fatal to a more serious analysis of hospital requirements. The hospital unit is an incident in hospital architecture—not a finality; to mistake its true place, to overrate its value, is disastrous to larger issues.

The superficial thinker who addresses himself to the task of planning a dormitory suitable for the sick believes that he has grasped the true inwardness of hospital planning. If a small hospital is in contemplation, his program first describes the requisites of a sanitary hospital unit; a few words are then added in regard to the kitchen, laundry, administrative offices, operating rooms, and dormitories; floors, doors, windows, and balconies receive brief mention, and the hospital scheme is complete. For a larger hospital the formula is the same, except that it becomes necessary to duplicate the hospital unit five, ten, or twenty times, according to the required number of beds. A program of this sort appeals to the uninitiated by virtue of its simplicity. Too often it is accepted as complete, or at least as sufficient for the purpose, and inevitably there results a hospital puerile in conception, lacking in breadth, without coherence. A hospital thus prematurely born is condemned by the very conditions of its birth to a lifelong struggle against clinical inefficiency, the causes of which may never be perceived.

There would be a different story to tell if one began with the conception of the hospital as a whole, a hospital with an organization designed to do any part, or all parts, of the work that modern medicine is capable of doing; a hospital which, by means of a proper utilization, distribution, and correlation of all available forces, enters properly equipped on the struggle to defeat disease by discovery, by prevention, by cure. Such a conception compels at the outset the survey of a wide range of requirements; its chosen method is the correlation of many functions; the daily cooperation of clinicians of varied training and capacity; the maintenance, in facile form, of a helpful copartnership between clinician, laboratory worker, nursing organization, business administration, domestic administration, and social service department. From the principle of cooperative effort should be deduced the relation of individual patients to each other and to the several parts of the hospital; thus, and thus only, should the planning of a hospital be undertaken. Fragments of hospitals have been created by fortuitous circumstances, and these, regardless of their fitness to fulfill the highest functions of a modern hospital, we have been too ready to accept, particularly if their ward units have conformed to sanitary standards and have shown a reasonable regard for convenience in their interior arrangement.

In an elaborate article on "The Planning of a Modern Hospital" a distinguished fellow worker, Dr. Christian R. Holmes, from another of whose papers I have already quoted, says that hospitals may be classified under the four following heads:

1. Municipal general hospitals, which "must admit every form of disease" (as if the compulsion so to do were a hardship and to be deplored).

2. Municipal special hospitals for contagious and communicable diseases.

3. Voluntary hospitals, which, "not being municipal, have the right to elect what classes of cases they will admit."

4. Special hospitals, such as lying-in, children's, orthopedic, ophthalmic, aural, neurological, and skin hospitals.

Having thus classified existing hospital types, Dr. Holmes proceeds to discuss in a most illuminating manner certain details of hospital construction. In his opinion "the first thing to be determined" in the planning of a hospital is "what type of ward shall be adopted," and "the next step is to develop the ward unit as the starting point of our whole hospital scheme," the ward unit being "a small, but complete, hospital in itself." Even for Dr. Holmes the fascinations of the ward unit are too great to withstand, and this accomplished hospital worker, having at the outset made it perfectly clear that there exist four varieties of hospitals which differ greatly in scope and principle, turns his back on the fundamental question of the relative value of the different kinds, and, without lending the weight of his authority to any principle of hospital organization, adds one

more voice to the chorus which proclaims the hospital unit as the starting point of all hospital planning.

How much more sensible, in planning a hospital, to ask at the outset, What properly constitutes a hospital? How should the clinical organization of a hospital be composed? What groups of cases, what clinical departments, should be recognized in order to insure the greatest efficiency in the treatment of disease? How organize, plan, and build in order to insure indispensable cooperative effort in the handling of complicated cases? To work out a theory of hospital organization, and then to create, at once or by gradual steps, an institution to correspond to the accepted theory, would be to organize and plan a hospital on rational lines. If hospitals were planned in this way, no phase of clinical medicine could or would be neglected. Since complicated cases are not rare in hospital practice, and since the care of such cases implies the cooperation of a group of clinicians of varied training and capacities, hospitals are in duty bound to establish departments equipped to deal with the special branches of medical and surgical work. It is of primary importance that the many distinctive problems in clinical medicine should be recognized, and the interrelations of the various branches of medicine provided for. We must no longer be content, with Galton, to define a general hospital as one "with a medical and a surgical side," or to accept, in defense of special hospitals which are lamentably deficient in all-round ability and equipment (necessarily so because of their self-imposed limitations), the statement, historically accurate though it be, that, "owing to the absence of any suitable provision for the treatment of special diseases, special hospitals were founded." Such a statement explains the origin of existing special hospitals, but it does not justify them. One may make "suitable provision for the treatment of special diseases" in special hospitals, but not until the patients who enter such hospitals are guaranteed that they will have no other diseases while there can one promise suitable provision for the patients themselves in institutions of such limited scope.

With the hospital unit as our sole guide, the general hospital, with "a medical and a surgical side," and the special hospital, with its one-sided organization and its helplessness in the face of unexpected and complicated emergencies, pass muster as satisfactory hospitals; but, inasmuch as neither the general hospital, which is composed exclusively of a medical and a surgical side, nor the special hospital, which is manned by a group of regional technicians, is prepared, in the treatment of its patients, to bring effectually to bear the combined resources of modern medicine, no hospital of either type should be created henceforth without a protest. And for the same reason existing hospital fragments, wherever and whenever possible, should be placed together into whole and competent hospitals.

The hospital unit has served its day and purpose. Today it is a stumbling-block in the road to hospital progress. Let us, therefore, by a common effort put it aside and turn to it only as we have need for it. No longer should it be permitted to occupy the middle of the road. He who looks on the hospital unit as a miniature, but complete, hospital has failed to read aright the signs of the times. Today the hospital unit is dependent not only on the central equipment of power plant, domestic service, etc., but on other ward units, designed primarily for other and specialized work. The internist, the general surgeon, the regional specialist, can no longer stand alone; therefore the ward unit, which is the clinician's workshop, has ceased to be an independent unit. The needs of the patients determine the right relation of members of the hospital staff to each other; to facilitate these relations is the great aim of modern hospital organization and construction. A single ward and its accessories no longer constitute a "hospital unit." Today a ward is an incomplete fragment—the hospital is itself the unit.

### Hydrotherapy.

According to Dr. Joseph H. Pratt, of Boston, in a recent address to the medical staff of the Clifton Springs Sanitarium, the yellow streak that runs through all forms of physical therapy deters many good men from investigating the value of hydrotherapy, though he sees signs of increased interest in the subject. The officers of the medical and pharmacological sections of the American Medical Association have in recent years sought repeatedly to have papers on this subject and allied subjects, and in an increasing number of hospitals the authorities are installing good equipments for hydrotherapy and mechanotherapy. While this is encouraging, Dr. Pratt states that it must be admitted that in some of the hospitals with hydrotherapeutic departments the apparatus is not used at all, and in others visited by him the work done is not such as to deserve commendation. He considers that it is essential for success that the hydrotherapeutic treatment in hospitals should be under the immediate direction of a physician trained in hydrotherapy who is in a position to devote a large portion of his time to this work. Too often the all-important details of temperature, duration of the bath or douche, and often the selection of the procedure, are left to the nurses and masseurs who give the treatments. Hospital authorities will in time realize that the selection of a trained man as director of the department of physical therapeutics is even more important than the selection of apparatus.

# THE SURGICAL UNIT.

## European and American Architecture Compared—Description of Equipment.

By EDWARD F. STEVENS.
FELLOW AMERICAN INSTITUTE OF ARCHITECTS, BOSTON.

THE surgical or operating unit, as applied to American hospitals, is much more varied than the medical ward unit, and far be it from me to say to members of the American Medical Association that this or that is the way to provide for this important branch of the hospital. We could not take as a model any of the European operating building plans, as the conditions are vastly different. In the German government hospitals one surgeon will do the majority of the operations, and will naturally need but one or two rooms, while with our hospitals it is not uncommon to see five or six operations going on at once in even a hundred-bed hospital.

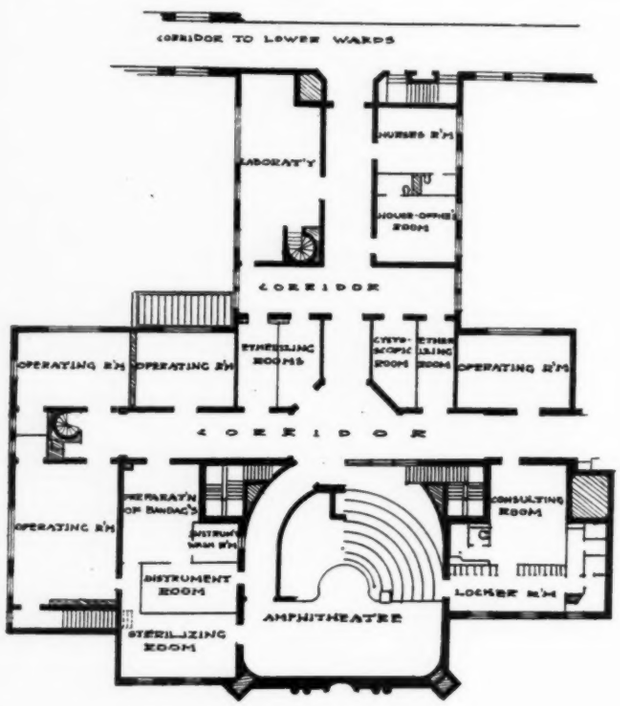
Then we must be governed by the local methods of the surgeons who will do the work. Moreover, every year come new methods of treatment from the anesthesia of the patient to the later recovery. Therefore a building planned to meet the requirements of today may, when finished eighteen months later, be lacking in some very essential detail, so that the up-to-the-minute operating unit is wellnigh impossible to obtain.

To illustrate the point just made about the European hospitals, I will call attention to several noteworthy examples:

The Virchow, at Berlin, with its 3,000 patients, a large percentage being surgical, has only four operating rooms, one of which is for septic cases.

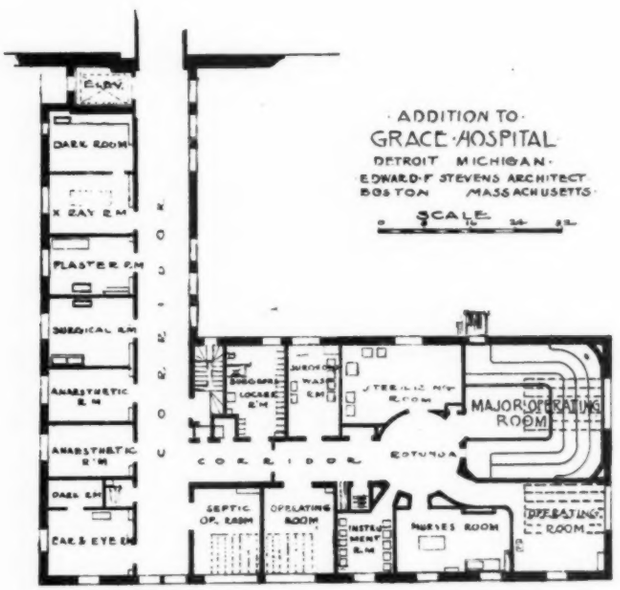
In the St. Georg, at Hamburg, there is but one aseptic operating room.

The Munich-Schwabing has only one aseptic operating room, while in the Massachusetts General (plate 1), with 250 patients, there are five, besides accident, surgical dressing and numerous surgical out-patient clinic rooms, in addition to which there is a separate operating room for the orthopedic department.




OPERATING BUILDING

PLATE 1.




PLAN OF THIRD FLOOR

PLATE 2.

In the operating department of the Grace Hospital (plate 2), at Detroit, there are three clean operating rooms besides the septic operating, surgical dressing, and plaster rooms. The surgeons' locker and dressing rooms are outside the clean portion of the department. Here the room for scrubbing up is not connected with the locker room. There is a large sterilizing room and a larger room for the nurses' work of preparation, an instrument room, where each surgeon has his own compartment in the instrument case, etc.

For the new surgical department of the Rhode Island General Hospital (plate 3) an entire up-

per story was remodeled to serve this purpose. This plan gives an abundance of work room for everybody.

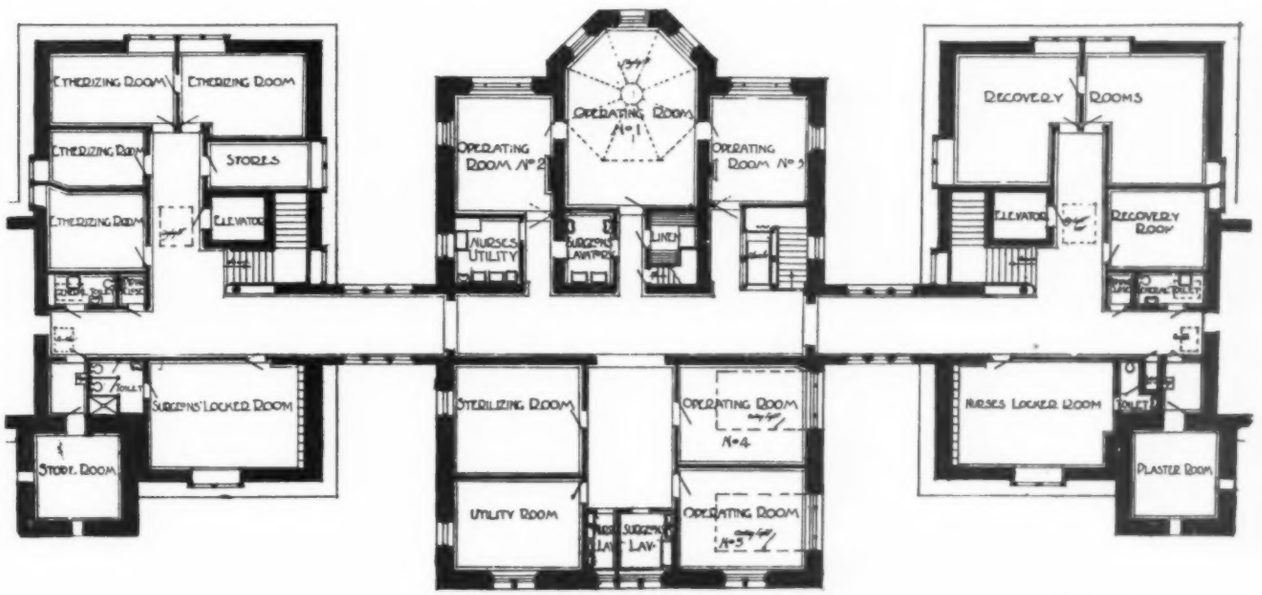
The operating department of the new Detroit General Hospital shows much study and thought, as it provides major operating room, with amphitheater for the use of students, and one emergency and two general operating rooms. The work of sterilizing for this department is done by two sterilizing rooms, each room supplying two of the operating rooms.

A nurses' work room is provided between the amphitheater and the second major operating room. The preparation or anesthetizing rooms, three in number, are between the main corridor and the various operating rooms.

In the other rooms of this department the comfort of visiting surgeons is looked after, having separate entrance to galleries and observation stands, avoiding the necessity of passing through the operating rooms themselves. A small laboratory is provided, also recovery, locker, waiting rooms, etc., making this unit very complete.

One of the most interesting problems it has been my privilege to work out is the operating building at Youngstown (plates 4 and 5), occupying a position at the north of the general group and west of the new Tod Wing, which is two stories in height and is divided into two sections —the accident and the operating.

The accident department, on the ground floor, gives access for ambulance patients of the hospital, the elevator reaching the first floor level. On the ground floor are located the receiving and waiting rooms, two accident rooms, laboratories, morgue, and storerooms, while on the first are the operating rooms and the two anesthetizing rooms, which are placed in the center of the building, with skylights, and entered either from the main corridor or from the operating corridor. This makes it unnecessary for the patient to enter the operating corridor until anesthetized. The three aseptic operating rooms open from this 10-foot corridor, in which are the surgeon's scrub-up bowls, so placed that six men may scrub at once. These bowls are of a special design, with elbow valves, soap dispensers, etc. A septic operating room is provided, and there are also a large sterilizing and nurses' work room, a small laboratory, instrument room, and blanket warmers.




OPERATING DEPARTMENT
RHODE ISLAND HOSPITAL, PROVIDENCE, R. I.

KENDALL, TAYLOR & STEVENS
ARCHITECTS

PLATE 3.

Sterile water is brought to each operating and accident room, and there heated locally by electric heaters.

The plan shown in plate 6 is that of the operating department of a small hospital—the City Hospital at Quincy, Mass. In this all of the essentials have been provided, with accident and Röntgen ray rooms, surgeons' room removed from the clean corridor, and the open scrub-up bowls.

### OPERATING DEPARTMENT ESSENTIALS.

It would seem to me essential that we should provide a sufficient number of well-lighted, well-heated, well-ventilated operating rooms. In these I would have little or no plumbing or other attached fixtures, except perhaps the floor drain and

the sterile water outlet. These outlets, with the local heaters now to be procured, can be very simple. This outlet nozzle should be hooded and protected against handling. The heating of the room should be sufficient for any desired reasonable temperature. A certain amount of fresh air should be introduced to make the room comfortable to work in, and, if this air can be washed, so much the better.

There can be no objection to direct heat, provided the heating units are readily accessible for cleaning. The glazing, in cold climates, should be double. This will allow fresh heated air to be introduced into the room between the glazing, and

GROUND FLOOR

OPERATING BUILDING
YOUNGSTOWN HOSPITAL
YOUNGSTOWN OHIO
EDWARD F. STEVENS ARCHITECT BOSTON MASS.
STANLEY & SCHEIBEL ASSO. ARCHTS YOUNGSTOWN

PLATE 4.

scrubbed, and sprayed, and every operating room should have a covered flushing floor drain.

Next to the operating room in importance is the sterilizing room. This need not be large, but should be specially ventilated, and all exhaust steam pipes extended to the open air wherever practicable. I would advise that the water sterilizers or still be at an elevation, so that the sterile water may flow to each operating room. I am inclined to think that the European type of box sterilizer, which opens like a cabinet, is the most convenient, as it at once gives access to the entire contents of the sterilizer. The saline solution tank, with thermostatic control, should be provided, and the basin and instrument sterilizers should be as simple as possible.

FIRST FLOOR

PLATE 5.

will also permit the use of rolling shades between the skylight and the ceiling.

For artificial lighting there is much to be said. The crane light has been used successfully, having the advantage of a direct and powerful light when needed, and capable of being removed when not wanted. In several of the hospitals I am using a form of reflected lighting, making four outlets near the ceiling. The light is reflected to an opal disk directly above, and thence to the operating table, with very little loss of light. These lights can be above the ceiling light if the construction permits.

The floor of the operating room, and in fact of the whole operating suite, should be of some nonabsorbing material which could be washed,

Perhaps next in importance is the work room for the nurses. This room should be large enough for the corps of nurses needed, and be provided with tables, sinks, slabs for cleaning instruments, special scrub-up bowl for the clean nurse, cabinets for the sterile and unsterile dressings, ether case, etc.

The small laboratory for quick diagnoses is considered a necessary part of the operating flat. Here should be provided sufficient apparatus for making quick microscopic examinations of tissues while the patient is still on the table.

There should be a room for instruments, where each surgeon should have his own locker or compartment, and anesthetizing rooms, well ventilated, sufficiently screened from the operating

corridor and sufficiently near the operating room, with doors of ample width, with jambs and door protected by metal. Blanket warmers, supply cabinets, and slop hoppers should be provided.

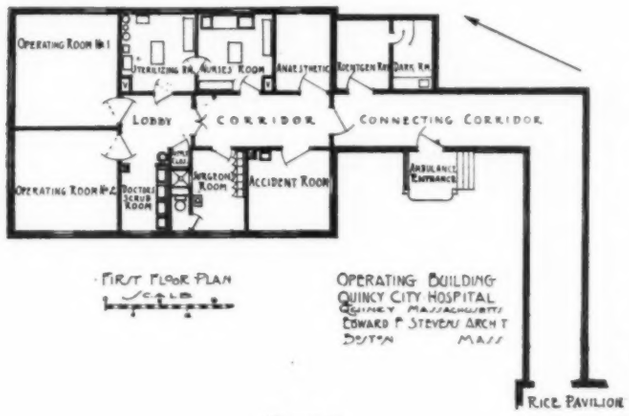



PLATE 6.

There should be a surgeons' room or rooms, of sufficient size, supplied with lockers for each surgeon, comfortable furniture, shower bath, and toilet.

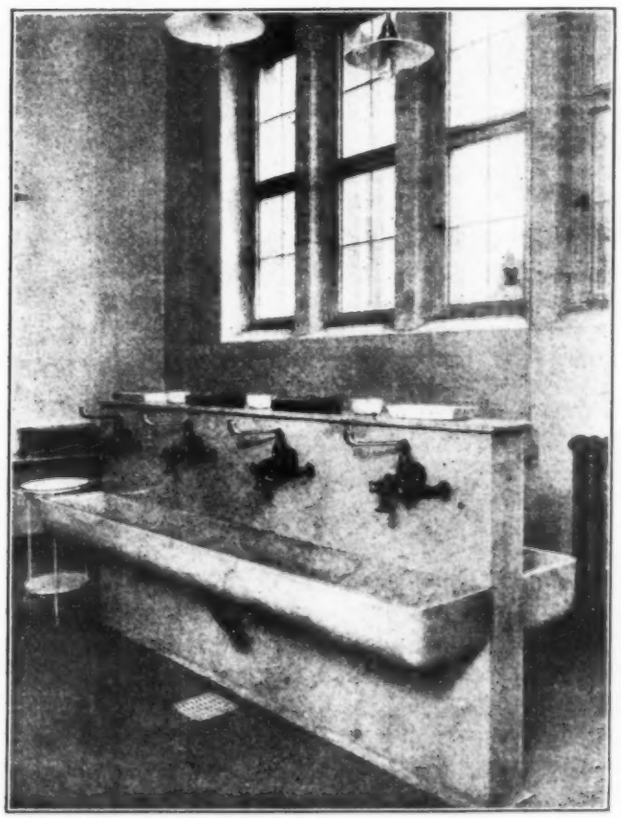


PLATE 7.

The scrub-up sink should, I believe, be either in the corridor or in an open alcove near the operating rooms, where it will not be necessary to open any door and where there will be plenty of room for all to work. Perhaps the nearest approach to an ideal scrub-up sink that I have seen is the one at the Munich-Schwabing Hospital (plate 7), where eight people can scrub at once, with no interference with one another.

There is so much that could be said about the detail and equipment of the operating unit, the operating table, the solution stands, the stretcher holders, wheel trucks, etc., that, if one attempted to cover the whole ground, this article would become too long.

### Aluminum Kitchen Utensils.

Professor Glaister, of the University of Glasgow, has made a series of experiments to determine the fitness of aluminum cooking utensils. Bacon, lard, milk, ordinary salt, dilute acetic acid, a mixture of salt and tartaric acid and citric acids, distilled water, "hard" water, and "soft" water did not have the slightest effect on the metal dishes, as evidenced by the failure to find even the least traces of aluminum in the substances cooked. Small amounts of metal were found in orange, cabbage, and tomatoes prepared in these vessels. The most solvent action was found to be due to sodium carbonate.

### Government Advice on Milk.

In order to determine the best way of pasteurizing milk so as to kill the disease germs, and yet not give the milk a cooked flavor or lesson its nutritive value, the Department of Agriculture, through its dairy division, has been conducting a series of experiments, treating milk at different temperatures and for different lengths of time. According to the report of these experiments in Bulletin 166 of the Bureau of Animal Industry, when milk is pasteurized at 145° F. for thirty minutes the chemical changes are so slight that it is unlikely that the protein (muscle-building element) or the phosphates of lime and magnesia are rendered less digestible than they are in raw milk.

Moreover, from a bacteriological standpoint, pasteurizing at low temperatures is found to be more satisfactory than pasteurizing at high temperatures. According to Bulletins 126 and 161, where low temperatures are used the majority of bacteria that survive are lactic acid organisms which play an important part in the normal souring of milk. When milk is efficiently pasteurized at high temperatures, the bacteria which survive are largely of the putrefactive kinds, and milk so treated, if kept for any length of time, has a tendency to rot instead of sour. From the standpoint of economy, the technologist of the dairy division finds that pasteurizing at low temperatures calls for less heat. It is found that it takes about 23½ percent less heat to raise milk to a temperature of 145° F. than to a temperature of 165° F. A similar gain is a saving of the ice needed, because it will require 23½ percent more refrigeration to cool milk to the shipping point when it is pasteurized at the higher temperature. The department, therefore, recommends that "when market milk is pasteurized it should be heated to about 145° F. and held at that temperature for 30 minutes."

According to Gaelic literature, the first hospital was located at Tara, the place of the kings of the heroic age of Ireland. It was called the "House of Sorrow," and was a hospital for the care of sick and wounded Red Branch knights, an order that flourished about 300 years B. C.

## THE SANATORIUM—YESTERDAY, TODAY, TOMORROW.

By JAMES G. MUMFORD.
LECTURER ON SURGERY, HARVARD MEDICAL SCHOOL; DIRECTOR THE CLIFTON SPRINGS SANATORIUM, CLIFTON SPRINGS, N. Y.

RECENTLY scientific medicine has begun casting fugitive and occasional glances upon the general sanatoriums, and has been asking why these great depots of pathology cannot be turned to better use in the world. I do not refer to the already valuable private sanatoriums for tuberculosis and for insanity, but to the great general sanatoriums. Why is it that these institutions do not stand with the hospitals for a wide service to the community, and for the advancement of medicine? The answer lies in the history of medicine and in the initial purposes of these two types—the hospital and the sanatorium—purposes widely asunder. Now, the hospital has come to occupy a position of the highest respect and confidence in modern society, while the purposes and accomplishments of the sanatorium are as yet uncertain. The hospital for more than a thousand years has stood for generosity, for self-sacrifice, for genuine help to the world's unfortunates. The sanatorium has stood for a more narrow and personal service. The hospital, even the private hospital, has long allied itself to science, has attracted to its service the great men of the medical profession, has even sacrificed itself to genuine progress. And most striking of all, perhaps, the great modern conception of a hospital's function as a school for medical teaching and training has distinguished it more than ever from the sanatorium. The medical profession, educators, hospital trustees, and even the general public acknowledge as axiomatic the fact that the ablest and most successful physicians are stimulated to their best endeavors by the obligation of teaching and by the generous rivalry which such teaching engenders. Thus are investigations made, facts recorded, experiments justified and perfected, and new knowledge added and published to the world. As a corollary we see the greatly successful hospitals become adjuncts and integral parts of the great university schools. For such reasons, hospitals, next to the universities and the colleges, have become the favorite objects of interest and benefaction in these modern days. Their great endowments are enabling them to continue their beneficent work.

The reply to all this, the defense of the sanatorium, runs somewhat on these lines: Very true, the sanatorium is not a great charitable institution; it is not a great factory of scientific progress. Such are not its functions. It is a retreat for the well-to-do sick. It is a medical institution for the more or less luxurious care and comfort of those who prefer to be ill away from their homes. These persons do not care to be studied; they do not care for highly trained and specially equipped physicians; they are mostly convalescents and chronic or incurable invalids; they ask merely for peace, reasonable medical oversight, and good nursing. Such is the common sanatorium defense.

This defense is not a just statement of modern conditions. Who shall say what is a convalescent, and what disease is chronic or incurable? In a subsequent writing I shall deal with the nature of a modern sanatorium clinic. Briefly, let us consider here the conditions inherent in sanatoria which render them inferior to hospitals and limit their usefulness. And let us regard the possibility of improvement.

With few exceptions, sanatoria are private institutions, owned and conducted largely for the production of dividends. They partake no little of the nature of hotels, but with medical adjuncts —a few overworked physicians (general practitioners, all too few), medical baths, perhaps a gymnasium, a fugitive laboratory, perhaps an x-ray plant, and a stereotyped dietary. In fact, such sanatoria are not yet sound, medical institutions in the proper sense. Moreover, such sanatoria often maintain a subservient attitude toward the medical profession, on which they are dependent for their patients, or "guests," as they are often called. Such are the majority of American sanatoria.

In contrast there are many small special sanatoria, owned and controlled by physicians, often by competent physicians, who are commonly neurologists or persons skilled in the care of nervous and mental diseases. To such institutions and to such physicians we look with confidence for substantial contributions to medical progress. The main difficulty and disadvantage with such special institutions is that they tend to become one-sided, for with their small staffs they cannot furnish groups of men especially skilled in the study of the divers conditions and complications incident to all disease. Consequently outside experts frequently must be called in, and the cost of maintenance and care of the patient must be proportionately increased.

Of late a third type, a better large general sanatorium, is showing rare signs of development

among us—a sanatorium either privately endowed and conducted by responsible trustees, or owned by a group of physicians without the special purpose of producing dividends, and dedicated to the proper care of the sick and to the advancement of medicine. The advent of such sanatoria is hopeful and encouraging, and bids fair to wipe out the sometime sanatorium reproach. Such institutions are truly special types of hospitals—indeed, the term "sanatorium-hospital" best expresses them. In foundation and resources they resemble somewhat the small college; they are supported in part by the fees of patients and in part by gifts or contributions from persons especially concerned for their success—for example, churches, mission boards, village communities, and the like. Such a sanatorium-hospital, when properly developed, is conducted especially for the well-to-do and for persons of small means—for the middle class and not for the poor; the poor must still seek the charitable foundations of the larger towns. The new sanatorium-hospital is in the country; it rejoices perhaps in spacious grounds and buildings, but above all else, it attracts to its staff and supports with increasing salaries and in cooperative practice a group of qualified experts, skilled in the study of disease, drawn from the university schools, themselves students and investigators, and looking perhaps for future university appointments. Such a sanatorium-hospital is equipped with proper laboratories, trained laboratory workers, x-ray investigators, an industrial department, and, best of all, the special departments of medicine, surgery, orthopedics, neurology, and the like, without which no general medical institution can become efficient. I shall discuss further the development of the modern and, I trust, model sanatorium.

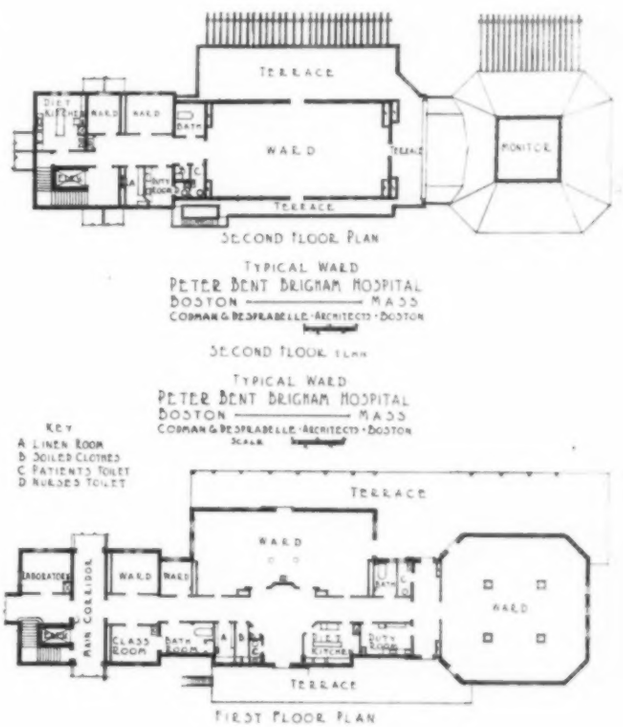
## PETER BENT BRIGHAM HOSPITAL.

### Arrangement of Wards for Purposes of Efficiency and Economy of Administration.

By HERBERT B. HOWARD, M. D.
SUPERINTENDENT.

THE typical ward of the Peter Bent Brigham Hospital is really not a ward—it is a building. There are four such buildings. Each contains three open wards of fourteen, twelve, and eight beds, respectively, and five rooms—three of two beds each and two of one bed. In outward appearance the edifice suggests the bow half of a passenger steamship, with decks, gangways leading from deck to deck, and each cabin receding somewhat from the cabin on the deck below. The structure recedes at each story from south to north, and also at the second story on the east and west; thus, as far as possible, preventing shadows from covering any of the windows, and allowing ample deck space.

What would be the bow of the steamship, at the south end of the building, is an octagonal, monitor-roofed, open ward. North from the middle of this ward runs a corridor, bisecting the structure, and crossing the main, open-air corridor of the hospital. On the east side of the ward corridor are another open ward, a single and a double room; and also, north of the main hospital corridor, a small laboratory for the exclusive use of the building. On the west lie the service rooms, diet kitchen, receiving bath, and class room. The open ward on the east is separated from the corridor by glass doors only, which can be opened, letting the breeze sweep through from a large door in the middle of the west side of the structure. Room is made for the desk of the




head nurse by broadening the corridor opposite this door; there she can see all, and be seen by

all. Surrounding the building on three sides is a broad, concreted terrace, covered on the east side by a pergola, with canvas roof for bad weather. As the doors of all the rooms and wards are wide enough for a bed to be rolled through, and as all beds are on wheels, moving so easily that the nurses handle them alone, the patients spend much of their time, both day and night, in the open air.

On the second floor the southern end, over the main part of the first floor, is occupied by a monitor-roofed, open ward, surrounded by terraces, or decks, amply broad for beds to be rolled outdoors. North of this ward are two bedrooms, the service rooms, bath, and the diet kitchen for the second and third floors. On the third floor the southern part, over the service rooms of the second floor, offers the opportunity for a ward open to the air on the south, there being space for six beds. The rest of that floor is devoted to a room for two beds, bath, toilet, and duty room. This floor can be conveniently used for isolation. A patient, placed on the elevator here, can be landed on the first floor in the open air, never entering the lower ward.

The door of the receiving bath is wide enough for a bed to pass, so that very sick patients can be bathed there in bed. That room, by the way, contains a fumigating closet. All bath tubs are raised high from the floor, for the sake of ease in cleaning and to avoid excessive stooping of the nurse when bathing a patient, and have very large faucets and vents.

The floors, with two exceptions, are of battleship linoleum, soft and silent. The exceptions consist of the portion under the beds in the open wards on the main floor, which is of granolithic, and is heated from beneath by pipes insulated on the sides and bottom, so that all the heat escapes up through the floor. The ward will rely chiefly on this heating.

Ventilation is accomplished, in the main, by natural means, facilitated by monitor roofs. Such means can, however, be supplemented by air forced in by fans, filtered and heated if desired. In the air exits are placed accelerating steam coils.

For the bell call system has been substituted the silent light indicator. Pressing the button lights the nurse's and head nurse's indicators, registers on a time clock, and also turns on a light at the head of the bed. That light can be extinguished by the nurse only at the bedside. Further, extinguishing it registers permanently on the clock the length of time it took the nurse to respond to the call.

The comfort of the patient has been throughout the paramount aim. The large air space per bed is noticeable. The lighting is, for the most part, indirect. Combined with comfort is the maximum of ease in cleaning and in serving, durability, and the minimum of cost. The result is, its constructors submit, satisfactory.

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## THE ENGLISH NATIONAL INSURANCE ACT.

### The Probable Effects of the Act on the Hospitals of the British Isles, and Especially on Those Supported by Voluntary Contributions.

By STEWART JOHNSON.
SECRETARY, GREAT ORMONDE STREET CHILDREN'S HOSPITAL, LONDON.

ON July 15, 1912, the National Insurance Act came into force in the British Isles. Briefly stated, the act provides, in return, with a few exceptions, for a uniform contribution from employer and employed, medical, sanatorium, maternity, sickness, and disablement benefits for all wage earners paid at a less rate than £160 a year, the lowest amount on which income tax is assessed —that is to say, for about 15,000,000 persons out of a total population of 45,000,000. So comprehensive a measure could not fail to produce a most far-reaching effect upon the country, even though pains were taken, to the extent of materially altering the character of the bill, to adapt its provisions to existing conditions. Naturally the hospitals, and especially the voluntary hospitals, one of the chief instruments in the preservation of the health of the nation, did not escape its influence. This influence is two-fold. In the first place, the act threatens to diminish the incomes of the voluntary hospitals. At present one cannot say more than threatens. It would appear improbable at first sight that people, either employers or employed, when they are compelled by law to pay would continue to contribute voluntarily for very much the same purpose. This tendency has for the time being been kept under to some extent by increased efforts on the part of the hospitals to obtain subscriptions, and may possibly in the future be counteracted by the increased in-

terest in the health of the nation which the act will undoubtedly awaken. For the moment it is too early to judge—only the future can decide.

If, however, the act threatens to take away with one hand, it distinctly promises to give with the other. Under its provisions the approved societies[1] and the insurance committees[2] may make donations to the hospitals, and on certain conditions may pay the sickness benefit of insured persons without dependents, or the maternity benefit of insured wives of insured husbands to the hospitals of which they are inmates. The sums received in this way are not likely to be great. At least, although they may be great enough to form welcome additions to the hospital income, they are not likely to make the difference between bankruptcy and solvency.

Under the somewhat misleadingly named "sanatorium benefit" the case is different. Here the hospitals have opportunities for recouping themselves handsomely for what they may lose in voluntary contributions.

Sanatorium benefit is thus defined: treatment in sanatoria or other institutions, or otherwise, when suffering from tuberculosis or such other diseases as the local government board, with the approval of the treasury, may appoint.

Sanatorium benefit can also be extended by the insurance committees to the dependents of insured persons; and, if the insurance funds are not sufficient to defray the costs, the treasury and the county councils may, on application of the insurance committee, make up the deficiency in equal shares. To secure the wise spending of this money, a royal commission on tuberculosis was appointed during the passage of the insurance bill. In its report it advised that any scheme for the treatment of tuberculosis should be applicable not merely to insured persons, but to the whole population, and this advice has been adopted by the government. The money for this purpose is to be provided in the same way as any deficiency under the insurance scheme—namely, in equal shares by the treasury and the borough or county councils, the latter being directed to prepare schemes for their respective boroughs or counties for the approval of the local government board.

In London the insurance committee has announced its intention of handing over the whole of its funds set aside for the sanatorium benefit to the London County Council, who will make arrangements for the treatment of tuberculous persons, whether insured or not, thus securing uniformity of administration, a sensible course which might well be adopted by the other insurance committees and county councils of the country. The councils may build institutions and provide treatment themselves, or they may contract with existing institutions to do so. As the report of the royal commission advised that existing institutions should be made use of as far as possible, it is probable that the latter course will be tried first.

At the moment of writing the county and borough councils are in negotiation with the general and chest hospitals for the admission of tuberculous patients to their wards. The amount that could be earned in this respect by the voluntary hospitals is considerable. At the same time it is recognized that, with the acceptance of money from public sources, there must come a degree of public control, from which the hospitals have hitherto been exempt. In fact, no hospital can admit patients paid for by the insurance committees or the borough or county councils unless it has previously been approved by the local government board, or, in other words, inspected. Moreover, universal experience teaches that when subsidies from the public exchequer are received, private support dwindles. On the other hand, the hospitals can scarcely admit free any patients for whose treatment public money is actually provided, while to refuse the patients is to cut themselves out of the current health movement. With these conflicting motives, the action of hospitals has been very diverse. St. Thomas' Hospital, well endowed, has established a tuberculosis dispensary under the act, but has declined any grant from the public authorities; the Mount Vernon Hospital for Consumption, with small endowment and subscription list, going to the other extreme, has given up the struggle. The committee obtained the permission at the annual court of governors to sell their hospital building, and to apply the proceeds to the maintenance of their country branch, which henceforward will be devoted to paying patients above the insurance line.

Between these two extremes the other hospitals will probably follow intermediate courses. After weighing up the advantages and disadvantages, it seems probable that they will elect to take the payments and the patients, accept the government inspection, and bargain for as small a degree of municipal control as possible. In bargaining, however, the hospitals have to remember that, though for the present they are, so to speak, masters of the situation, owing to the great demand for beds for tuberculosis and the small supply to

[1]The approved societies are composed of insured persons. They may not be carried on for profit, and their affairs must be subject to the absolute control of their members.

[2]Insurance committees are constituted for every county or county borough. Three-fifths of the members must represent the insured persons. One-fifth are appointed by the county or county borough council, the remainder by the insurance commissioners. A proportion of the nominees must be medical men.

hand, yet the insurance act sets aside a large capital sum for the building of sanatoria or institutions, so that in a very short time their commanding position will be lost unless they are moderately compliant.

At present the treatment of tuberculosis only is in question, but, on turning back to the definition of sanatorium benefit, the reader will observe that the concluding words of the section are, "or such other diseases as the local government board, with the approval of the treasury, may appoint." Thus complete machinery exists within the four corners of the act for providing hospital treatment for all diseases for the entire insured population and their dependents, while it has been found unavoidable not to extend this treatment, in the case of tuberculosis, to those persons excluded from the scope of the act.

It will thus be seen that there is no chance of the hospitals perishing for want of funds. As Mr. Lloyd George said to a deputation of hospital managers: "Supposing * * * the sources of subscription were dried up, the hospitals of this country are so essential a part of the machinery of civilization that I cannot imagine any country allowing a single hospital to be closed." But with a change in the source of funds must come a change in the ruling authority. "No taxation without representation" is a principle which no American or Englishman is ever likely to forget. Moreover, with the receipt of payments, in any shape, from public bodies, there must be imported into the voluntary system ideas hitherto foreign to it. The system is based on distinctly charitable principles. The hospitals, on the whole, are supported by one class—the well-to-do—and attended by another—the poor. The members of the boards of management, nominally elected by the subscribers, but in reality coopted by one another, belong as a rule almost exclusively to the upper classes. It speaks volumes for their efficient administration that a system so opposed to the democratic spirit of the age has survived so long and should still continue to give satisfaction. The secret may perhaps be found in the fact that the boards, although responsible in name to the subscribers, have always behaved as though their responsibility were to the general public. Contrast, now, these ideas with the ideas underlying the insurance act. The voluntary contributions of the rich were the expression of sympathy which one individual feels for another less fortunate than himself. The taxation in which the employer now acquiesces is the recognition of the identity of the interests of employer and employed—of the view that the sickness of the latter is an injury to the former. The deduction from his wages to which the employee submits is a premium for which definite rights are expected and exacted, unlike the former workman's contributions which the hospitals have always regarded merely as evidence of gratitude and not in any sense as conferring a right to treatment. Mr. Lloyd George promised the insured persons medical attendance free from the taint of charity. Perhaps he expressed himself badly, or the reporter did so for him. Charity that is given and received in the true spirit is without taint. Nevertheless there is a feeling abroad that charity—or rather what we may call, for short, cash-charity—is or ought to be an anachronism. The introduction into a system in which supporter and patient are different persons—the one rich, the other poor—of a second system in which supporter and patient are one and the same and neither rich nor poor, cannot fail to set up strains which must bring about important alterations in the constitution of the voluntary hospitals.

The system may be said to have been established in the eighteenth century. It is true that there are a few hospitals much older, but a great number arose during that period and formed a model on which subsequent hospitals based themselves. During the eighteenth century popular local government had almost died out, and what local government still persisted was for the most part notoriously corrupt. Such charities as were intrusted to the municipalities were misapplied or despoiled. It was fortunate that at that age the provision of public medical attendance was not considered to fall within the purview of the state or the municipality, but was left to individual philanthropy. In the meantime, moreover, a new system of local government, based on popular representative principles, has spread over the kingdom, poles apart from the debased corporations contemporary with the founding of the first voluntary hospitals. It would be a slander on our modern municipalities to assert that they were less capable of managing a hospital than their counterparts on the European continent. If there is one characteristic in which the Anglo-Saxon race believes itself to excel, it is the capacity for local self-government. Indeed, one knows by experience that many of the hospitals of the councils and boards of guardians in the United Kingdom are admirably conducted institutions. All that one can say is that, good though they may be, none in Great Britain as yet have reached the same pitch of excellence as the voluntary hospitals, thanks largely to the services of their honorary medical and surgical staffs, which their independent position has enabled them to secure. It is, however, difficult to see how such capable

bodies as the present-day borough and county councils can be prevented, once they are paying large sums yearly to the hospitals, from acquiring some voice in their management. What degree of control the councils will desire and obtain is a matter for the future. In their perplexity the managers of hospitals have shown a disposition to look to the colonies and the United States for a solution of their problems. The respective merits of subsidies from state or municipality in proportion to the amount of subscriptions raised, or in proportion to the number of beds occupied, or in proportion to the annual difference between expenditure and income, or in the shape of simple payments in respect of each patient, has been much debated. Each plan has its partisans, but the last appears to be most generally preferred and to be that most likely to be adopted by both councils and hospitals in the case of tuberculous patients. It has the merit, in the eyes of the hospitals, of putting the one who pays in the position of a customer rather than that of a shareholder. The analogy is not quite exact, but it will serve. A customer who pays well has, of course, some influence on the direction of the establishment he patronizes, but of a less intimate nature than the shareholder who can place his representative on the board of directors. Another argument in favor of this arrangement is that there are few voluntary hospitals which do not serve areas larger than those of local government. Where, as in the case of the poor law and fever hospitals, admissions to institutions are restricted to the inhabitants of definite localities, there arise constant disputes as to settlement and liabilities; whereas no shop, if we may liken a hospital taking in paying patients to such an establishment, cares where its customers come from. If, however, such a plan is unacceptable, some other plan must be found. It is obviously impossible, for example, that the score or so of borough or county councils which sent patients to the hospitals of the metropolis can place representatives on the boards of the round hundred institutions within their boundaries. The only way to meet the difficulty would be to create district hospital boards, responsible for much wider areas than those at present ruled by any borough or county council. On such a board representatives of the several bodies of ratepayers, the voluntary subscribers and the trustees of endowment funds might jointly sit, with the added advantage of removing the hospitals a step from party government. Some such system has been recently adopted in New Zealand, a pioneer country in social experiment, the working of which will be followed with much interest in the mother country. It must be confessed that it would be something of a revolution if the voluntary hospitals were to participate in such a scheme. Hitherto the voluntary system as it has flourished in Great Britain has been marked by the ultra-independence of the individual bodies. No institution has tolerated outside control nor has attempted to interfere with the independence of other institutions. One and all have declined to surrender any executive power to a central body even composed of their own representatives, and they have frequently stood aloof when they might have been excused for giving their advice unasked either to the legislature or to other charities. As the modern Congregationalists, the descendants of the old Cromwellian independents, are in the ecclesiastical world, so are the voluntary institutions in the hospital world. Yet there are signs of departure from this exclusive attitude. It is a maxim in politics that the strength of the central government varies directly with the pressure on the frontiers. The voluntary hospitals have begun to feel the pressure on their frontiers, and, although the pressure has not been sufficiently great to induce any of them to part with a shred of executive power, yet it has been enough to drive them to take counsel together.

Conferences, both local and general, of hospitals have been frequent since the introduction of the national insurance bill. The British Hospitals Association was started about three years ago, and has rapidly enrolled the majority of voluntary hospitals as members. In the intervals of meetings interchange of information between the various hospitals by letter as to each other's doings is incessant, and makes quite a tax on the correspondence department of the offices. Every system, however good, has the defects of its qualities. While the British system, by extreme individualization, has produced examples of excellence hard to be surpassed in any other country in the world, it also misdirects much of its energy through lack of coordination. The hospitals of England resemble a fleet of splendidly manned and equipped vessels without an admiral; or, to compare things not small with things still greater, the United States of America before the work of Alexander Hamilton. At present each unit of the hospital community pursues its own course of action, subject only to the controlling law, that like stimulations tend to produce like reactions in bodies of kindred constitution. Could, out of the general stir which national insurance has set up, some well-balanced system be evolved, in which the several institutions might preserve a measure of that independence which has proved so exhilarating in the past, while directing their exertions

under joint guidance to some common and recognized aim, then the more remote consequences of the act may be of even greater utility than those which are nearer and more obvious.

Few countries that profess to be progressive are more conservative than Great Britain. Its people do not change their ideas very readily—it is rather the people themselves that change, by death and birth. It may be, therefore, that a generation will elapse before these changes are complete, although a change of some sort come there must.

## ADMISSION OF TUBERCULOSIS CASES TO GENERAL HOSPITALS.

By THEODORE B. SACHS, M. D.
PRESIDENT MUNICIPAL TUBERCULOSIS SANITARIUM, CHICAGO, ILL.

IN a comprehensive plan of cooperation for control and gradual reduction of tuberculosis in a community, the general hospital has an important function to perform. Its present state of disassociation from the general movement, resulting from the policy of exclusion of tuberculosis cases, is unjust to the patient, to the institution itself, to its medical and nursing staffs, and to the community at large. The policy was born in fear based on misconception.

Tuberculosis belongs to the group of communicable diseases, the contagion of which operates within limited space and is easily localized and rendered innocuous. In this respect it does not differ from pneumonia or typhoid, admissible at present to all general hospitals. With strict adherence to hygiene, consisting chiefly of precautions during cough, efficient disposal of sputum, and the necessary disassociation, in case of open tuberculosis, from other patients, the tuberculosis case resolves into a problem by itself, unaffecting others.

There are no valid reasons why certain classes of tuberculosis cases should not find room in general hospitals, and this with great benefit to the community and the institution itself. A small ward, a few private rooms, a separate serving pantry and dining room, and separate toilet facilities in case of "open" cases will furnish all the necessary facilities.

In main, the following classes of cases should be provided for:

1. Cases for diagnosis. In this important particular the general hospital can render a great service in the tuberculosis movement. With their modern clinical and laboratory facilities, and resident staffs eager to study, general hospitals should have tuberculosis "diagnostic" wards or rooms, into which doubtful dispensary and private cases could be admitted for short periods of observation. Such wards are particularly essential in hospitals connected with teaching institutions, but just as important in all general hospitals.

2. Cases with suddenly developed grave manifestations, as pulmonary hemorrhage, etc. Temporary admission of such cases into private rooms or special wards, and their retention until the subsidence of the grave disturbance, and subsequent removal, if necessary, to a special institution.

3. Admission of all cases of tuberculosis into hospitals possessing special wards and rooms, with all its accessory arrangements.

Of the important reasons dictating the reversal of the present policy of exclusion of tuberculosis cases, the following should be mentioned:

1. The great importance of cooperation of all medical institutions in the diagnosis of tuberculosis cases in curable stages.

2. The great need of all available hospital space for cases of an extremely widespread disease.

3. The great importance of training medical and nursing staffs of general hospitals in the method of prevention and care of tuberculosis cases.

4. The advantage of the policy of admitting tuberculosis cases into specially designated wards or rooms instead of the present policy of surreptitiously admitting such cases into general wards.

5. The vast importance of teaching tuberculosis to students in hospitals connected with teaching institutions.

The question of admission of tuberculosis cases into general hospitals should be thoroughly analyzed and dealt with without prejudice at meetings of medical staffs of general hospitals all over the land.

### Mattress for Infants.

Mrs. Emilie Eschle has devised what appears to be a simple and practical "take-down" mattress which may be used for infants, or in cases where there is likely to be much soiling. As described in the *Zeitschrift fuer Krankenanstalten*, Vol. 9, 1913, No. 22, the mattress cover, instead of being sewed as usual, is, by means of suitable perforations, made firm by passing tape or a heavy cord through them, and any desirable filling may be used. To clean the mattress, it is merely necessary to remove the tape, empty the filling, and wash the cover. A still more advantageous model is one where the cord or tape is not passed through and through, but is simply passed so as to connect the opposite folding flaps.

## SOCIAL SERVICE IN THE HOSPITAL.

By REBA SHAEFFER, R. N.
CHIEF OF THE SOCIAL SERVICE BUREAU, MICHAEL REESE HOSPITAL, CHICAGO.

STATISTICS are essential in every line of work, but social service cannot be told in figures; we deal too intimately with the human being, with his pains and sorrows, his fears and hopes, and these cannot be arrayed and tabulated. Nor can we assign each effort to its own position of importance. Which is relatively more important—to ease a mother's agonized mind as to the condition of her little ones at home while she is at the hospital, to obtain financial aid for a family whose main support is in the hospital, or to send a patient to a convalescent home so that she may build up and so be prepared to take her place again in the home, in a fit condition to resume her responsibilities? Who can say? There is no rule which can be used to gauge the importance of these things. It is the work itself which looms up far above any classification.

Our free patients are, in the main, foreigners. They come to the hospital as to a place on the portals of which, to their minds, is written, "All who enter here leave hope behind." They know nothing of the routine or the rules of the place. They come because pain and suffering leave them no alternative. Because of their ignorance they are distrustful. It is hard for them, who have been so harried by environment and circumstance, to believe that anybody would do aught of good for them without an ulterior motive.

They are too accustomed to the quid pro quo to, at first, give their confidence freely without wondering at the interest displayed in them for seemingly no reason except that they are sick and poor. But finally patience and the fact that they are addressed in their own tongue melts all barriers and they grow utterly dependent on our offices, so dependent, in fact, that they bring all their difficulties to us to untangle. All bodily, mental, and domestic ills are put before us with the utmost candor, and with an implicit confidence that we will find a panacea, no matter what the trouble may be.

Of all the problems brought to us, the hardest to solve is what to do with the unmarried mother. The first thing we try to impress upon the mother is that her duty toward the child is greater than any she may owe her parents or herself. This is not always easy. At first she feels only fear that the hard, uncompromising world may find out her disgrace and give no quarter. It is only by making her realize that we are not setting up as judges; that we do not feel that we can cast the first stone; that, while we know what wrong was done, we cannot compute the temptation resisted, but are ready to meet her as sister women, to stretch out the helping hand of sympathy and understanding, so that we can reach her at all.

Then, after the premise that the mother must and ought to keep her child is established, and the mother begins to feel less like a hunted animal, the other steps of the problem must slowly be worked out. And that same world that seems so unyielding and hard when taken in the aggregate resolves itself into sympathetic units. Often there are people willing to take into their own homes and help and encourage the poor girl to regain her self-respect. It is our work to forge the link between these good people and the girl who needs them.

Social service work, to be successful, must be the epitome of interest, sympathy, and wide understanding. Social service, working out of a hospital, differs just a little from other forms. We deal hardly at all with the patient as a nurse would do—the hospital and the doctors and the hospital nurses do that. But the patient is not afflicted only with a bodily disease; he or she has a family at home—perhaps small children, with no one to care for them. Perhaps there is no food or no fuel; perhaps there is a peddler's little stock of perishables, or a peddler's poor horse that is without food. Perhaps there is sickness at home as well as in the hospital. Then the patient is not only physically ill, but heart-sick with anxiety—for the poor have hearts also, and are capable of mental suffering, however much we, of the hard world, are schooled to think to the contrary.

It is our part to visit the sick one as soon as he is admitted, speak to him in his own language, win his confidence, and find out about conditions at home; find out what he is worried about, for almost every poor patient brings with him into the hospital some anxiety, something to worry about. Then we visit the home; if there is a sick wife or a sick child, we send a visiting nurse at once. If there is no food, we go and get some. In the meantime we telephone to the head nurse of the ward at the hospital, giving her a message for the patient, telling him just what we have done, and we put into the message some little personal touch, or a message from someone at home, so the patient, as yet distrustful, will know he is not being deceived.

We do not quit the home until everything is in

good order. Then, after our morning rounds are over, we go back to the hospital and see the patient again and tell him all about the happenings in the home and what we did there.

If it is a child that is ill, the mother must be visited at home, and how eager and anxious she is to know all about the little one—what the doctors say, and what the nurses say. It is very hard sometimes, because there is no good message to bring—only more heart-ache if we tell the whole truth, and, if we do not tell the truth and the worst happens, we have done a double wrong —to the mother, whose grief is mixed with anger, and to ourselves because we forfeit that confidence so necessary if we are to succeed.

When the patient is discharged we must get orders from the doctor and go to the home to see that the orders are set in motion—food for convalescence, sanitation and hygiene; and, again, we must help, so that everything will be a little better for the convalescent's comfort and peace of mind.

The doctors tell us our work does very much for their patients in helping toward recovery, and they wonder how they ever got along without us.

## THE OWNERSHIP OF X-RAY PLATES.

### Patient and Medical Attendant Entitled to Radiologist's Opinion and Not the Plate.

By E. H. SKINNER, M. D.
KANSAS CITY, MO.
RADIOLOGIST TO THE SWEDISH HOSPITAL, ST. LUKE'S HOSPITAL, AND MERCY HOSPITAL; CONSULTING RADIOLOGIST TO THE KANSAS CITY GENERAL HOSPITAL.

THE ownership and possession of x-ray plates is an important matter. First and foremost, let it be established that the x-ray plate itself is not so important as its interpretation. The x-ray plate is a means to the end in that it furnishes the tangible evidence on which the radiologist bases his diagnostic opinion. To the layman and to the physician unfamiliar with x-ray interpretation the x-ray plate is valueless. In fact, the x-ray plate without careful interpretation may be harmful to the patient and embarrassing to the attending physician.

Granted that the x-ray plate is the basis of the radiologist's opinion, it is absolutely essential that he keep all plates carefully filed in his laboratory, so that he may constantly have access to these records in case of dispute. Patients change physicians, and the x-ray findings should always be available. The relation of the radiologist to the patient should not be altered even though there be a change of attending physicians. The radiologist conducts his examination at the suggestion of the attending physician, but the fees are paid by the patient to the radiologist direct. The radiologist must never consider that he is privileged to advise the patient regarding surgical or medical treatment, and his diagnostic opinion should always be delivered to the attending physician, whose helpmate he is.

There are two other points which may be raised:

First, what should be the attitude of hospitals where the x-ray laboratory is conducted by a radiologist in the employ of the hospital? Here the responsibility rests with the hospital, and all x-ray plates and records should be the property of the hospital, and the radiologist can have no claim upon them. These hospital x-ray records should still be available to the patient if attending physician be changed, or if they will be of any legitimate value to the patient.

Second, the attending physician may make his own x-ray examination. In this case the x-ray plate still remains in the possession of the physician as a part of his records of the case, and in this event there may be some justification in declining to convey the x-ray information to a subsequent attending physician, especially if there has been no individual charge for the x-ray examination. If, however, the patient is not seeking to embarrass or malign his former physician, we cannot conceive of a liberal-minded physician denying such x-ray information or at least an inspection of the x-ray plates to his successor in the attendance on a former patient. Nevertheless, the strict analysis of the situation appears to warrant the ownership and possession of x-ray plates and their interpretation by the physician who has conducted the x-ray examination at his own expense just as he has made a urinalysis or an orificial examination.

Another phase of this subject presents itself in the sketches or reproduction of fluoroscopic shadows obtained by the radiologist in the fluoroscopic and orthodiagraphic examination of the chest and abdomen. The disposal of such material lends itself to the same arguments as x-ray plates. These are records of the case on which

an opinion is based, and are therefore the property of the radiologist, who may convey his opinion or exhibit the records at the request of the patient, exhibiting due regard to the ethics of his relations to the previous attending physicians in the case.

Still another point of interest is the demand by the patient for a print or reproduction of the original x-ray plate. There should be no objection to advancing a print to the attending physician, which is to be attached to his case record. Again, insurance companies and railroads or other corporations may legitimately expect and receive reproductions of any x-ray plates and records which can be filed with their otherwise complete data in the case. Whether the patient should be accorded a review of such diagnostic data should depend on the wishes of the parties who are paying for the x-ray services. The radiologist, who is or always should be a physician, must jealously guard any information he obtains for the benefit of the client who asks his opinion for a consideration.

At the best, any print reproduction of an x-ray plate is not as good from a pictorial standpoint or for diagnostic interpretation as the original negative. Therefore the print will do the patient no good whatever. He cannot interpret it, and can enjoy it only as a matter of curiosity. The family album or the parlor table is no place for reliable x-ray evidence. Furthermore, the possession of an x-ray print by the patient or friends leads to all manner of mischievous interpretation by whomsoever it is inspected. The patient should always be received by the radiologist as if seeking an opinion based on x-ray findings and not as if applying for an x-ray photograph. The patient has no more right to expect or demand an x-ray print than he has to receive a photomicrograph or pathological slide from his pathologist.

Certain authorities can now be cited to maintain radiological records in their rightful position. The American Röntgen Ray Society passed a resolution at the annual meeting in 1910 which reads as follows:[1]

"Resolved, that the American Röntgen Ray Society indorses the views presented in Dr. Stover's paper, vesting a property right in the radiogram with the radiographer, inasmuch as the radiogram is a part of his clinical record of examination."

There are certain situations in which the possession of the x-ray plate is embarrassing, especially where a patient is seeking revenge at law for the faulty treatment of a fracture. It is always possible for a lawyer to serve a subpena duces tecum and compel the radiologist to present his x-ray record and plates in court, however unwilling he may be. If the radiologist in private or hospital practice makes it a rule to receive patients only by reference from the attending physician, he will be relieved from many unpleasant court experiences in malpractice suits. One should always be suspicious of persons who apply for radiographs of a fracture without proper introductions, because, if the radiologist has made any examination whatever, his appearance in court can be demanded. Many lawyers have used x-ray plates showing distorted or abnormal fracture shadows to impress the jury when the functional and clinical result of the fracture was all that could be desired. Many times when the patient has been shown his x-ray plates, and he is cognizant of the abnormal anatomical position, he is prone to minimize his functional result and prolong his convalescence until after his lawsuit is settled. Many radiologists are prone to unintentionally or unconsciously magnify the anatomic discrepancies in a case, and fail to interpret with due regard to the functional prognosis. Inasmuch as a hospital is responsible for the acts of employees, radiologist included, it is necessary to see that the written reports on x-ray examinations are not burdened with too much gratuitous surgical information, especially in large city hospitals, where so many people apply for fracture treatment who are liable to seek redress for supposed injurious treatment at the hands of an indulgent staff, or from their employers, or public corporations responsible for the injuries. The x-ray written report is usually attached to the complete case record, and becomes available for inspection on proper demand. A report which was full of x-ray information to the surgeon might be distorted into a criticism by an unscrupulous attorney in court. Such complications should be avoided.

The great increase in x-ray installations over the whole world demands careful attention to the ethical relationship of the radiologist to his professional clientele or to the hospital in which he serves. A nonmedical x-ray operator should never be permitted to give a medical opinion; his position is to furnish x-ray negatives and maintain efficient fluoroscopic apparatus for his medical and surgical superiors. Radiology as a specialty demands one who has been trained in the fundamentals of medicine and surgery; the mechanical side of radiology is secondary. From such a radiologist the profession may obtain x-ray interpretations of value, and expect an appreciation and maintenance of an ethical understanding.

A Philippine woman recently gave birth to her twenty-first child in the Manila General Hospital.

There died in the Philippine Islands last year 50 persons over 100 years old.

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Business Office . . . Metropolitan Building, St. Louis

EDITORS.

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Winford H. Smith . . Johns Hopkins Hospital, Baltimore
S. S. Goldwater . . . . . Mt. Sinai Hospital, New York
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## Salutatory.

There are in the United States 6,665 institutions of record for the care of the sick, with a total capacity of more than 600,000 beds. By a modest estimate, these huge figures represent a money investment in land, buildings, and equipment of not less than $1,500,000,000, and an annual outlay for maintenance approaching $250,000,000.

On the human side, there are more than 100,000 trustees of hospitals, and more than 65,000 physicians on hospital medical staffs. About 10,000,000 men and women contribute annually to hospital funds, and approximately 9,000,000 men, women, and children are patients in the hospitals in the course of each year.

The hospital, in its broader sense and in its many aspects, has already become a powerful influence on society, if indeed it is not now the chief factor in a process of remolding and remaking the modern social fabric; its benign influence must be exerted in the future to divert the attention of the people away from the sordid pursuit of personal gain and selfish pleasure, and into an atmosphere pervaded by higher motives and more altruistic ambitions. But as yet there has been no welding together of the forces and influences that, even working separately and oftentimes in diverse directions, have such magnificent results. What may, then, be expected if all these agencies can be correlated and harmonized, and made to progress in one direction and toward a common beneficent goal?

There is so much to be done. By common consent, based upon the needs of the time, it is decreed that there shall be a bed in a good hospital for every sick and hurt man, woman, and child, and that every resource of medical skill, seconded by the highest order of trained nursing, and aided by all the arts and sciences, shall be at the service of rich and poor for the cure of disease. But it is no longer enough that those who can shall merely help to cure disease; the time is come when the prevention of disease looms larger than the cure, and in this field the hospital must show the way, again by the aid of the sciences and the arts, directed along the lines of hygiene, sanitation, pure living, and right thinking.

Even here the hospital finds no pause. Men were not born free and equal; the scales of justice have not weighed for all alike; the gentle dews of heaven have not rained down upon the just and the unjust in even portions; and so it becomes the task of today and the duty of the hospital, again in its larger sense, to help overcome the irregularities of birthright, to even the balances that have weighed so badly, and to bring to the lowly and the oppressed the beneficences of Faith, Hope, and Charity.

The social service of today is no charity, but a meager and halting attempt to mete out a common justice, to right the wrongs which are the accumulated transgressions of all the ages. Social service is a new human melting pot, wherein the weak and the poor and the unfortunate are blended in the warm fires of a common brotherhood with the rich, the strong, and the self-reliant; and the process must bring forth a new humanity, a new moral code, a new religion. These are the appointed works of the hospital of the future, and it was with some such thoughts as these that a few hospital administrators have banded themselves together to give hospital workers everywhere a bond of union, an agent for the collection and dissemination of experience and knowledge concerning their common service to humanity.

THE MODERN HOSPITAL is offered by the men who compose its editorial staff as this agent. They make no pretense of leadership; it is only their hope that the hospital world may find in the new agent a vehicle of expression that will bring into wider usefulness the experience and the learning of each individual, to the end that these may become the common harvest of all.

In the splendid work of bringing to fruition the

noble purposes of modern philanthropy, it is the highest ambition of THE MODERN HOSPITAL to be one of the humble agents. If it shall be the means of bringing into a single hospital, or sanatorium, or asylum one item of efficiency that shall add to the comfort and happiness of a single human being, its workers will be proud of their part; if through its efforts there shall come a higher order of service to the sick and suffering everywhere, their highest ambitions will have been achieved.

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### The Hospital as a Factor in Modern Society.

The changed circumstances of living at the present time have brought about corresponding changes in all institutions, and especially in the relation of the hospital to the community. The crowding of people into cities has destroyed the old village methods which characterized city life during much of the nineteenth century. Then the sick were cared for almost wholly in the home, and were nursed by members of the family. When the family became exhausted by the strain of long-continued nursing, it was customary to call for assistance upon neighbors and friends, particularly for the care of the sick at night. Every man of advancing age can remember the demands made for watchers at night, and persons often wholly inexperienced in such duties were pressed into service, with little advantage to the sick. If people were friendless and destitute, they were transferred to hospitals, if such existed, where they received indifferent medical care and more indifferent nursing. If there happened to be no hospitals, they were sent to almshouses, where the conditions were wellnigh hopeless.

The trend toward the city and the increased cost of living, together with the necessity in many instances that women should engage in wage-earning occupations, have done away in great measure with the home care of the sick. Added to this also is the conviction on the part of the entire community that hospitals furnish better care and nursing, and as a result the hospital and the hospital nurse have superseded the home and the family in the care of cases of acute disease.

Home conditions are also changed. Fewer families occupy a single dwelling, and the tiny flat or contracted apartment house no longer is sufficient to accommodate sick members of the family. Economic conditions are no longer favorable to home care, and recourse to the hospital has become necessary. It is not strange that the hospital has flourished in every community, both large and small.

The increased number of diseases also which require surgical interference has likewise rendered necessary the multiplication of hospitals. Such cases cannot be operated upon and safely treated at home without prohibitory expense.

The popularity of hospitals has also unquestionably been due in no small measure to the trained nurse. She replaced the hospital orderly and the unskilled woman of the servant class who formerly reigned supreme in all city hospitals. They were usually persons of questionable antecedents and of uncertain habits. The growth of the trained nurse in numbers has also tended to displace the old-fashioned family practitioner, who frequently in the old days combined many of the duties of the nurse and physician. He is no longer as important in the family, and his position as a watchdog of the health of its members has been taken in many instances by the trained nurse. The hospital has fostered, in its turn, the development of nursing, and it is not strange that both rich and poor profit by the skill and tender care of the trained nurse.

What has been the influence of these changed conditions on the community at large? Unquestionably there is less amateur nursing and less personal service to the sick from the "natural-born" nurse and the motherly men and women who formerly were regarded "so good in sickness." The lack of opportunity to render this personal service has unquestionably been a loss to those who formerly rendered it, and in consequence there is less development of their kindly inclinations in this philanthropic direction. The work which they formerly performed is much better done by the hospital and the trained nurse. The sick are better cared for with less waste of energy, and their presence in the home does not interrupt the occupations and exhaust the means of wage earners.

There is also much more systematic effort to prevent the spread of disease and to seek out its causes. Hand in hand with such preventive measures are the labors of the social worker to assist the convalescent patient when he returns to his own home, and to relieve the tendency to chronic disease and resulting poverty and suffering in the family, which might otherwise follow.

The influence of the hospital on the community thus becomes a permanent and lasting agency for health and social betterment. Hospital methods must improve in order to serve more perfectly the needs of the public—and they will improve. The day of the general home care of the sick can never return. Social conditions forbid the possibility that hospitals will become superfluous.

HENRY M. HURD.

### The Real Hospital Problem.

In a recent number of a journal "devoted to the promotion of economy and efficiency of hospital planning, construction, equipment, management, and allied work," there are twenty-two headings to editorials or articles. Of these only ten do not deal specifically with nursing, and twelve deal entirely with discussions of nursing problems, as indicated by the following list of headings: "How to Keep Well on Night Duty," "Nursing Control in Arkansas," "Boards of Nurse Examiners," "Nurse Teaching by Mail," "My Search for Ideal Nursing," "Preliminary Nurse Training," "The Nurse at Home," "The Value of Discipline," "Responsibility in Nurses," "Some Routine Hard Work," "Hospital Experience from a Patient's Bed."

The journal referred to is not a nursing journal, as one might suppose. This is not intended as a criticism of the journal, but simply to call attention to the fact that, considering the large number of hospitals, superintendents, and officials, and the unlimited number of problems to be discussed, the conclusion would seem to be justified that nursing is the one subject that most writers feel competent to discuss or are interested in, or we hospital officials are particularly barren of new ideas, or particularly apathetic, or have little or no interest in contributing anything for the benefit of our colleagues.

Now, here is another hospital journal, and let us see to it that interesting papers and discussions are forthcoming for publication. Surely there are a sufficient number engaged in hospital work who have some new ideas, some new methods, or something to say which might be helpful to "the other fellow," and which might make our hospital journals really interesting and relieve them of the necessity of filling space with this everlasting discussion on nursing.

To continue this thought a little further, why not leave the nursing problem alone for a little while, and acknowledge that it is safe and better handled in the hands of the nurses? We all admit the development of nursing to be one of the great achievements of our hospitals, but let us ask ourselves at the same time, Mr. Superintendent and Mr. Practicing Physician, what we have ever contributed to this splendid development. Why should not boards of examiners be composed of nurses? They are more competent for the work, and at least are no more susceptible to corruption and influence than boards of men. Why should they not be active in legislation for safeguarding their profession? They have made it what it is. Why not be honest, and, if opposed to maintaining high standards, to registration, and all the nurses want, say that we are opposed because it may mean that our institution will have to pay more for the nursing, or because it may mean some very careful study in readjustment? Let us not try to deceive ourselves and others in the belief that our opposition is because of our interest in the nursing profession or the public. No one who knows is deceived. Let us meet the issue fairly and squarely, and let us pay more attention to the big problems waiting to be solved—social service in your hospital, medical organization in mine, efficiency in general, and the part our hospitals are to play in preventive medicine of the future, and the possibilities of the hospitals for a broader, more efficient usefulness in the service of public health and safety.

WINFORD H. SMITH.

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### American Hospital Statistics.

There are probably few more important problems affecting the interests of the general public and the medical profession than the scientific tabulation and qualified analysis of our hospital statistics. It cannot be denied that at the present time, with the single notable exception of Johns Hopkins, of Baltimore, the annual statistical reports of our hospitals are of practically no real utility whatever for the many useful purposes which they could be made to serve. Considering the modern tendency toward governmental interference in *all* that has a bearing on problems of public health and disease prevention, it is obvious that the time cannot be far distant when the subject of hospital statistics will be taken up by the federal and state authorities, if only for the preliminary purpose of determining the true incidence of institutional morbidity. As a nation we are rapidly coming to the conclusion that the problem of preventable sickness is at least of equal economic importance with the recognized problem of preventable mortality, and from no source is there even a remote chance that more useful information can be derived than from a qualified statistical tabulation and analysis of our hospital experience. It is, therefore, most lamentable that at the present time, with the single exception of Johns Hopkins, our hospitals, large and small, should present to publicity annually a mass of ill-arranged and ill-digested data, instead of realizing that the experience of any institution and of all institutions combined is a matter of profound importance to the public and the medical profession. It would, therefore, seem that among the many useful functions that THE MODERN HOSPITAL can be made to serve, there are few, if

any, of greater practical importance than the scientific and uniform tabulation of hospital experience, in conformity to accepted principles of statistical arrangement and the standardized nomenclature of disease. At the present time it is readily conceded that the annual reports of Johns Hopkins represent the most readily attainable ideal in statistical practice, and that the Bellevue classification of diseases and surgical operations is the most correct for the needs of the general public, public health officials, and the medical and surgical profession generally.[1]

F. L. HOFFMAN,
Statistician, Prudential Insurance Company.

### The Sanatorium—The Ideal and the Real.

It is a peculiar fact that the sanatorium, as it was conceived very many years ago and as it was idealized, was a very far step in advance of the common institution practice of the time. In theory the early sanatorium was an institution for the cure of the sick by the substitution of rest and quiet, fresh air, proper food, and a well-modulated amount of wholesome exercise for the inordinate amount of medicine that was the practice of the day. We have now caught up with this ideal in the general hospital, and every thought of the modern hospital builder hinges about these fundamental requirements of fresh air, rest, and quiet, good food and wholesome exercise.

Where is the sanatorium today? Has it kept the pace? Even the name has fallen into disrepute and the small handful of institutions that are upholding the high ideals on which the sanatorium principle set out are now "hospitals." Many sanatoriums have descended to mere money-making concerns, and the only attempt to maintain a highly developed technic is in the business office, and concerns the devious ways by which money may be extracted from those who are suffering from a class of ills that render them peculiarly susceptible to "mental impression."

And yet the sanatorium principle is as virile, as sound, and as necessary today as ever. It has, and must continue to have, a large place in modern therapy; the country, trees, flowers, sunshine, fresh air, pure fresh food, and rest and quiet are growing necessities of the sick, all the more so because the strenuousness of the modern life and the intensity of modern activity have swelled the ranks of the nervous, the dyspeptic, and the anemic. But it no longer suffices that we merely nurse, feed and amuse the sick. The physician demands an accurate diagnosis, so that he may properly direct his treatment, and to give him that diagnosis there must be facilities. Therefore, the sanatorium that would ride to high success on the popular wave of enlightened public opinion must include in its equipment an adequate laboratory of pathology in all its branches, and the proper accessories for hydro- and physico-therapy.

But first, and most prominent of all, the modern, efficient sanatorium must command the services of trained, scientific men, who know how to employ its efficient equipment, and how to evaluate the results of their work. Psychiatry and neurology and neuropathology have gone far forward in these last years, and diseases hopelessly beyond scientific aid a few years ago are now well within the hand of the specialist—and the sanatorium is his logical agent.

THE MODERN HOSPITAL sets out upon its career the avowed and loyal friend of sanatorium principles, and the friend of those institutions that are making reasonable effort to realize their opportunities. It purposes to help in every way. To this end it has been fortunate, indeed, in engaging the interest of Dr. James G. Mumford, of Harvard Medical School, and director of Clifton Springs Sanatorium, who will represent the sanatorium interests in the editorial staff.

Dr. Mumford's article in this number on "The Sanatorium—Yesterday, Today, Tomorrow," is intended to be the introduction to a campaign for better sanatorium conditions everywhere. Editorially and otherwise Dr. Mumford will hereafter follow up his subject and prosecute his campaign. Those of the sanatorium folk who believe there is work to be done in such a field will help Dr. Mumford by contributions for his pages, by their criticism, either of his own opinions or of prevailing practices, and by their moral support.

JOHN ALLAN HORNSBY.

### The Boston Meeting.

The American Hospital Association meets in Boston this year after an absence of eight years. Many things have transpired in that short time vitally affecting the hospitals and the association.

In 1905 the association numbered only a few superintendents and was two years old. Today it numbers more than a thousand men and women—superintendents, medical staff members, trustees, and philanthropists.

All these years the association has been meeting as one body for all its sessions, if the "question box" sessions are not counted. This year's meeting will be signalized by a recognition of the

[1]For a more extended discussion of the subject see a forthcoming Bulletin of Johns Hopkins Hospital on the experience of that institution for the last twenty years.

necessity for sectional meetings, the divisions being into large and small hospitals.

In eight years some hospital construction changes have occurred. The vacuum system for ventilation, for cooling and warming air, has come and gone. We closed the windows about eight years ago and lived on air from the dank, damp sub-basement for a while; but again the windows are open, and fresh air and God's sunshine and breezes are no longer tabooed. Composition floors and battleship linoleum, now with us, give promise of a permanent stay as do steel window and door frames. Metal wall cabinets are good additions, taking the place of costlier furniture that took up much needed room. Typhoid stool sterilizers have been perfected as a part of the utility room architecture, ward incinerators and blanket warmers are new since the last Boston meeting and have their place. Not very many other specific improvements have been made.

And, yet, the whole hospital situation has changed in those few years. But the change has been in the direction of efficiency rather than in specific principles. Very few hospitals made any pretense of conducting a laboratory of pathology eight years ago; now there are hundreds that are doing real work. Operating room technic that was to be relied on was limited to a comparatively few hospitals; now good technic is the rule. There were not three diet kitchens in this country worth mentioning; now there are hundreds that are capable of working with the clinician in metabolism.

In eight years we have come to think a little less about the amount of money we spend in our institutions, and a little more about the service we give to the doctor and his patient.

It would be a bold prophet who would attempt to picture the changes that will take place in institutional practice in the eight years to come. But it might not be a bad thing to think a little way into the future of the American Hospital Association.

A great move forward was made this year when the officers of the association recognized the principle of the section meeting. We can never go back now; the swaddling clothes, once discarded, can never be worn again. Then, how are the sections to be divided for the future? Into topics or into classes of people? Or how? Shall we have a section on scientific departments, on nursing, on hospital help, on food, on the mechanical things? Or shall we have a section of trustees, another of medical staff members, a third of superintendents, and so on? Or, instead of sections and section meetings, shall we have sessions of the whole membership and take up separate topics in the way of the symposium? The meetings are too large, and too few people have an opportunity to be heard on the floor.

We are face to face with one other problem just now. The officers this year recognized it when they divided the Boston meeting into sessions for large and for small hospitals. The problem is how to cultivate a broader democracy in the association. Too few people have a voice in the management of the association. There is not the wide difference between the small and the large hospital today that there used to be. There was a time when the small hospital stood for poverty and mediocrity. That is not true now, and there are hospitals of fifty, one hundred, and two hundred patients that stand for quality of service and high ideals, and are quite as well supported by their patrons as the large, magnificently endowed institutions; and these hospitals are manned by as cultured, scientific men and women as the large institutions.

Then, there are the very small hospitals owned by medical specialists and superintended by high-salaried men and women. Some of these hospitals have only a few beds—10, 25, or 50—and yet they stand for something very real and very substantial.

So let us break away the barrier between the large and small hospital, and in its stead raise another that shall divide the good hospital from the bad. And it would seem that this new alignment might come by way of the distribution of the honor offices in the association, in some such manner as the following: a president to be elected by the whole membership of the association; a vice president for each state in the Union, to be elected by members of the association in the several states and sent on to take his office at the annual meeting.

Such an alignment will encourage state organization, give permanency and strength and authority to state effort in any deserved direction, and serve to weld the different parts of the country together for mutual protection and progress.

### England's Hospital Situation.

We, in this country, have almost been led to believe, because of constant iteration, that the hospitals abroad have settled all the problems with which we are vexed, and that only we are groping in the dark. That this is not by any means the case may be gathered from Dr. Crookshank's masterful report of the recent hospital conference at Oxford, to be found elsewhere in this number.

The problem of tuberculosis in the general hos-

pital, which the Oxford conference debated, happens to be a very lively topic with us just now; and it is rather timely, therefore, that Dr. Sachs' paper on this subject also appears in this number. It is interesting to note the similarity of sentiment in the Oxford discussion with the position taken by Dr. Sachs.

Let us congratulate ourselves that we have progressed beyond the status of England in the matter of hospital accommodation for persons of means.

We may note with sympathy that England also has her hospital architects who blunder. This is not the fault of the architects, either here or in England; it is the fault of trustees who are charged with the expenditure of money that should be almost holy, since it is intended for the most sacred of purposes—the amelioration of human suffering. In many hospitals built in this country the architect is selected for some other reason than that of fitness. That such an architect should be able to swing around the circle, skimming the surface of hospital architecture, and go home qualified to build a hospital, is, of course, preposterous; and it is equally absurd to think that a dozen sets of blue prints of hospitals he has visited, carried home in his trunk, will give him the master's degree as a hospital architect. But we are learning in all these things, and that our older cousins across the water are groping in the haze of the same perplexities may serve as a stimulus in the search for the clear light of a better day.

### Our Department of Queries and Answers.

In other pages of THE MODERN HOSPITAL will be found questions and answers concerning hospital problems. It is obvious that these questions were not sent in with the expectation that they would be answered in this manner. As a matter of fact, all the questions discussed have been received by a member of the editorial staff within the past few weeks, and it has been deemed expedient to answer them in the journal for several reasons: (1) It is no small task to verify one's personal experience and general knowledge on any subject so that it shall be technically as well as broadly correct for the profitable use of others, and the questions are, as a rule, of such character that their discussion should be of wider interest and profit than a mere personal answer would satisfy. (2) It is contemplated that the present number shall open a permanent department of "Queries and Answers," and readers are invited to use the department either to ask questions or to discuss subjects already answered and concerning which there can be a difference of opinion. In other words, if a reader shall find that some question has been answered in a manner contrary to his or her own experience, a further discussion of it is invited.

In the conduct of this department the usual procedure will be to refer each question to that particular member of the editorial staff whose experience would seem to best qualify him to give an authoritative answer. In the event of a question coming in that would seem to call for very special knowledge not possessed by a member of the editorial staff, it is intended to call for expert counsel outside the staff. Whenever admissible, answers will be signed, so that readers may have authority for whatever information is furnished.

It is believed that this department can be made of great value to the hospital people, and it is sincerely hoped that they will take advantage of the opportunity afforded to settle many vexatious, interesting and important problems.

## EDITORIAL COMMENT.

When the women obtain the full right to vote, it may be possible to increase the appropriations for public hospitals out of money saved by a little more conservatism in appropriations for new jobs, monumental public buildings, and by the elimination of plain graft. The women have hearts.

The new Sea View Municipal Hospital of New York seems to be in a bad way. It was planned to cost $2,000,000, and already $3,627,000 has been expended. The Bureau of Municipal Research is asking why. But, like in most municipalities, the people of New York have become accustomed to bad guesses on institution costs.

The splendid new $4,000,000 hospital in Cincinnati seems to be in the hands of the political spoilsmen. The medical profession and the public are in open rebellion. It is a serious thing to prostitute a great public philanthropy in this age, and many an administration that started out as well as Mayor Hunt's has come to grief with less provocation.

In another column there is a story of social service in the hospital. It is a message brought by a soldier from the firing line. The entrenchments of selfishness are in the storming; the citadels of a sordid world are in the smoke of the battle; the little army is bringing succor and good cheer to the helpless, the afflicted, and the sorely pressed. Perhaps all the suffering in the world is merely the acid test of human nature—to bring out the courage, devotion, and unselfishness.

## THE MINNEAPOLIS A. M. A. MEETING.

### Profitable Session of the Hospital Section of the American Medical Association—Abstracts of Papers.

Some of the best papers that have ever been written on hospital subjects were read before the Hospital Section at the Minneapolis meeting of the American Medical Association, June 17-20. The papers themselves were all full of meat, and the discussions were in every way worthy of them.

The meeting, as a whole, was one of the most successful that the American Medical Association has ever had. There were about 5,000 members of the Association present, and the ladies and other noncombatants brought together at Minneapolis a crowd of about 7,000 people. The weather and the work were hot. Everybody had a good time. The arrangements for the entertainment of the guests were everything that could have been desired. The university folks turned over the university buildings for meeting purposes, and the sections were all housed in them. The conditions were in every way ideal for holding a great meeting. The lecture rooms in the various buildings easily accommodated those present, and there were microscopes, stereopticons, and every other facility to give to the section officers and the readers of papers everything they could want for a first-rate presentation of their work.

The Hospital Section meetings were not very largely attended, and the sessions were of quality rather than quantity. It was the experience of the Hospital Section officers that too many papers are on programs as a rule; for instance, there were forty papers in the Surgical Section, which left no time for discussion, and everything had to be hurried through. For the Hospital Section it was decided to have only about five papers each day, which would take up one-half the morning, leaving 50 percent of the time for discussion. The afternoons of each day were left open to be employed in sight-seeing and whatever recreations the members enjoyed most. A number of those who registered under the Hospital Section visited the principal hospitals of Minneapolis and St. Paul during these afternoons. Dr. Ancker, at the City and County Hospital, St. Paul, has been building a new group of hospital structures, and, as usual, Dr. Ancker installed some exceptionally good machinery and showed his guests some of the new devices of various sorts.

Dr. H. O. Collins, superintendent of the City Hospital, Minneapolis, is also building some new structures, among them a nurses' home, and nurses will be glad to know that Dr. Collins is building a private room for each pupil nurse.

Dr. Baldwin, of the University Hospital, is just catching his breath between some new construction just completed, and some architectural planning for the immediate future.

Dr. Howard, of the Peter Bent Brigham Hospital, chairman of the Hospital Section, presided at all of the meetings, and, although extremely modest in his self-appraisement, made an ideal presiding officer and drew out discussions that a less able presiding officer would not have elicited.

The chairman's address was a masterpiece. The concentrated wisdom of a long and busy career poured like crystal water for half an hour.

In his address the chairman ran over the past of hospital history in this country very briefly, and in five minutes was down to a survey of the present and predictions for the future. There are about twice as many hospitals in this country as there were three years ago, according to the chairman, and it will be a very short time until the public will demand that every community shall have a sufficient number of hospital beds for every sick person in the community. In other words, Dr. Howard thinks that in the very near future every person taken seriously sick will find his best care and best opportunity for recovery in a good hospital. He thinks also that the hospitals are growing better all the time—indeed, was very optimistic on this point—and held out the highly significant fact that philanthropists and people of means are rapidly coming to a state of mind in which they will liberally support every hospital that is doing really good work. He thinks the time has gone by when good hospitals need suffer for want of funds. The chairman urged three things that the hospital of today and tomorrow must stand for in order to succeed: first, the care of patients; second, scientific investigation into the causes and cure of disease; and third, the education of physicians, nurses, and hospital people generally, and through them the public, in the best methods to cure and the best methods to prevent disease. Dr. Howard drew attention to the fact that many hospitals today have scientific laboratories in each of their several departments greater in point of size and cost, and far greater in usefulness, than the whole laboratories of those same institutions ten years ago. He pointed to the great advance in the attitude of trustees and the public in regard to scientific investigation in the hospital, and gave concrete examples of trustees who only a few years ago threatened to resign if certain moneys were not expended "for the care of patients" instead of for scientific inves-

### HOWARDISMS.

**Pointed Paragraphs in the Chairman's Annual Address.**

*There are twice as many hospitals as there were three years ago.*

*The public is going to demand that every community shall have enough hospital beds to care for every sick person.*

*Three things that our hospitals should stand for: 1, the care of the sick; 2, scientific investigation; 3, the education of physicians, nurses, orderlies, and through these the public at large, concerning the care of the sick and the methods to prevent disease.*

*Sympathy, Gentleness, and Courtesy are the three graces of the hospital—three ministering angels to the sick.*

*There is no longer any fear that the public will not support scientific investigation.*

*Many communities spend all their money in buildings too large for the number of patients they have, and are then left without money to support them.*

*A hospital without patients cannot educate—it cannot do good.*

*Spend less money on your buildings and more on your running expenses. When the public is impressed with the good a hospital is doing, the money will come.*

*Gathering the sick into the hospitals not only places them where they can be better cared for, and given better chances for recovery, but conserves the energy of the physician and multiplies his usefulness.*

tigation. These same men today, he said, were more than willing to have their money spent in scientific investigation, knowing that such expenditure was for the highest good of the patient and the public at large. The chairman made a very strong point of the fact that a great many hospital boards are spending too much money on the architecture of their buildings, leaving themselves too little for their administration. He strongly advised the building of plain, simple, but efficient, hospital buildings that would permit of economic administration, and he held out the glowing promise that hospitals directed along these lines would have no difficulty in commanding abundant funds for every legitimate purpose. The giving public is a wise fiscal agent today, he thought, and is quite capable of judging whether an institution's trustees are making the best use of the funds intrusted to them, and,

DR. L. B. BALDWIN.
Newly elected chairman of the Hospital Section.

if so, the public is perfectly willing and even anxious to give all the money that such a board needs.

Dr. Howard thinks that vast changes have taken place recently in another direction, and that is the attitude of the medical profession toward hospital patients. He knew a patient, not so very many years ago, who had tuberculosis and was given a prescription that would have cost two or three dollars to fill, and was told to spend his winters in the south. The fact that the patient was a day laborer, had a large family dependent on him, and not a dollar available for his own care, seemed not to have dawned on the physician. He thinks such an incident as this could not happen today in any well conducted hospital or among physicians of experience.

The speaker's address gave a very concrete running account of what happens today to the patient who applies for admission to a properly conducted institution: "When such a patient applies at our out-patient departments," he said, "a careful physical examination is made and conditions are noted. Then there is an investigation as to his ability to apply the necessary treatment. Someone visits his home to see if it is possible for the patient to sleep out of doors; if it is not, some society finds for him a sleeping porch. If he cannot pay for the medicines that are needed, the society, as a rule, furnishes these medicines free. If he needs a few months in a tuberculosis sanitarium to begin with, this is provided for, and the social worker interests the various charitable organizations to look out for the family during this sojourn. When he has returned to the community, the same careful investigation is followed up. He is gathered into a class of tubercular patients who meet evenings to get their directions and encouragement from the physician in charge, and almost before you know it this family and the neighbors have all of them become educated in what is proper today not only to help a tubercular case to recover, but to prevent others in the neighborhood from contracting the disease." This progress Dr. Howard attributed entirely to the initiative of the general hospital in the community, and he spoke of tuberculosis merely because that seems to be one of the diseases to which more special public attention is devoted just at this time.

Dr. Howard has three graces that are ministering angels to the sick in the wards of every hospital that is entitled to public support and public sympathy. They are Sympathy, Kindness, and Courtesy, and, if Sympathy pervades the atmosphere of the hospital, her handmaidens, Kindness and Courtesy, are ever present.

## ABSTRACTS OF PAPERS READ.

### The Ward and Operating Units of the General Hospital.

By Edward F. Stevens, A. A. I. A. Hospital Architect, Boston, Mass.

The first session of the Hospital Section was a day of hospital architecture, there being five papers on one or another phase of architecture for the day's work.

Mr. Stevens is an architect, and was one of the foremost architects in the country when some years ago he chose to confine his activities to hospital architecture as a most inviting and attractive field. He had just come from Europe, after a three months' stay, when he prepared his paper, which was liberally illustrated. "The plan of the ward unit," he said, "whether in a 100-bed hospital or a 1,000-bed hospital, has precisely the same problems to solve—namely, the best care of the patient for the least expenditure of energy on the part of the nurse or attendant." He had visited during his sojourn in Europe four hospitals: the Barmbeck-Hamburg at Hamburg, the Rigs at Copenhagen, the Bispeberg at Copenhagen, and the Munich-Schwabing at Munich. In all these institutions he found some new and most desirable features. Many illustrations accompanied his description of these hospitals.

In the Barmbeck City Hospital at Hamburg, he said the architect, Ruppel, had differed somewhat from his usual planning, and had placed the medical unit center, or bath house, on the axis of the plan, while with the St. Georg, the Eppendorf, and the Virchow the bath house is placed on the medical side, balancing the operating building on the surgical. Grouped with this medical center he found an entertainment hall for patients, which was used as a church on occasion. On the surgical side there were three pavilions connected by corridors with a fourth pavilion isolated somewhat. Sixteen beds made up the larg-

est ward in this hospital, and off of each ward was a "liegehalle," or air balcony, and off of each ward a "tageraum," or day room. The service rooms, including the laboratory and the surgical dressing rooms, were all grouped together at some distance from the patients. Each pavilion of this hospital was two stories, and there were a few rooms over the second story for nurses to rest in and who could be called quickly for emergency service.

The operating room in this hospital Mr. Stevens found rather peculiarly arranged from the American viewpoint, but this was partly explained by the fact that the hospital was situated several miles out in the country and had little or no emergency work to do. There were two surgical operating rooms in a suite, one for clean and the other for septic cases, and in these only major surgery was done. Minor operations and all surgical dressings were performed in the dressing wards of the surgical units.

The new Rigs Hospital, at Copenhagen, which has been occupied only for a short time, is, like all European hospitals, of the pavilion type, with corridors connecting the main groups of buildings, and with the surgical and medical units opposite each other at the extremes of the central corridor. In this hospital the bath house again is its chief feature on the medical side. (We all know that in Europe hydrotherapy has a very much larger place than in this country.) In this hospital another feature common to nearly every other European hospital exists—namely, a conveniently situated and elaborately equipped autopsy room. Mr. Stevens' guide, in an aside to him, remarked that for the patients' sake she could have wished for a little less attention to the autopsy room and a little more attention somewhere else. This side remark of Mr. Stevens' guide is, to the mind of the present writer, a touch on the quick of the chief difference between the hospitals of Europe and those of this country.

The maternity, Mr. Stevens found, was one of the largest departments of this hospital, and was provided for the care of the vast army of unfortunate women who are found everywhere in Europe.

The ward unit of this hospital, Mr. Stevens found, was a most interesting study as to its arrangement. He thought it had much to commend it. The staircase, elevator, and noisy parts generally were at the extreme ends of the unit, as far removed from patients as possible, while the serving kitchen, bath and sink rooms, the surgical dressing room, and the toilets were at the opposite end of the building, also as far away from patients as was necessary to preserve quiet in their surroundings. The ward itself, which contained twenty-six beds, was divided into eight sections, each containing three or four beds, and the sections being divided by a screen high enough to afford privacy to all the patients and so arranged as to allow of easy access on the part of the nurses. These screens were six feet high and the bottoms were a foot from the floor, and did not interfere in any way with the ventilation of the whole ward. An isolation ward and a nurses' room were placed in the center of the ward. Surgeons' basins and medicine closets were in each ward. Mr. Stevens thought this was the best ward unit he saw abroad.

The next hospital Mr. Stevens visited was the Bispeberg, at Copenhagen, which is composed of forty-six buildings, each two or three stories high, located on a plot of ground of fifty-one acres. All the buildings were connected by underground corridors, and only the six surgical units were connected by above-ground corridors. The bath house was an independent building, too far removed, he thought, from the medical units. The division in the ward units was as follows: two sixteen-bed wards and two six- and two three-bed wards, with all the service rooms in the center and with a single large day room on the axis. Each building in this group had its air balconies, and the grounds were laid out with arbors, benches, and fountains.

One of the most complete new hospitals in Europe, Mr. Stevens thought, is the Munich-Schwabing. The architect, Schachner, had not only embodied the best of German planning, but had coupled with it the best that we have in this country. The different services were in different buildings. The hospital is of the pavilion order, but all the buildings were connected by above-ground corridors, except the contagious department, and the connections with this were by an underground corridor. The administration building in this group was in the center, with a chapel and nurses' residence, the hospital offices, and the home for interns. Radiating from this central administration group were the various services. The most interesting of these service groups was that for surgery, the patients' units of which were grouped around an operating building entirely separate from the patients' quarters, excepting by corridor; the medical units had for a center the bath house. Mr. Stevens liked the ward unit arrangement of this hospital. There were no large wards, the largest being twelve beds, all of them facing toward the south, with arrangements for wheeling patients to the galleries and to the gardens. The service rooms of these units were all to the north, and the day room was on the south side of the patients' quarters. In this hospital the patients, after admission, were distributed to their several locations and were sent there in their street clothes. The patient's clothing is removed, put into a container made of linen and hung on a truck, made for the purpose, with a lot of hooks. In an adjoining room he is given a bath and hospital clothing. He then passes through to another room, where the physical examination by the intern is made and the history taken. He then goes to his bed in the ward. Much might be said by the American hospital administrator as to the time necessary to be taken for all of this detail before the patient finally gets to bed, and this technic shows again, it seems to the writer, a difference between the treatment of patients in this country and in Europe. Over here we take it for granted that a patient is sick when he comes to a hospital, and that the first thing to do for him is to get him to bed.

In the subsequent numbers of his paper, Mr. Stevens took up in detail the difference in the architecture of European and American hospitals, contrasting those he had just described with such new American institutions as the Peter Bent Brigham Hospital, of Boston, the new Cincinnati General Hospital, the new Detroit General Hospital, and others. He thought the conditions surrounding the construction and operation of American hospitals accounted for the difference in architecture as compared with European institutions, and thought the outside causes had very much to do with this difference; as, for instance, most of the European institutions are built and conducted by the state, whereas in this country private philanthropy builds and supports the hospitals as a rule, which must give rise to a large difference of opinion as to the accommodations for patients and the arrangements for scientific study. Mr. Stevens commented at some length on the diversity of arrangement in this country and Europe, especially in regard to the surgical unit; as, for instance, in the Virchow Hospital, at Berlin, with its 3,000 patients, a large percentage of which are surgical, there were only

four operating rooms all told, one of them for septic cases. In the Munich-Schwabing Hospital there was only one clean operating room, while in the Massachusetts General Hospital, with only 250 patients, there are five clean operating rooms, besides other surgical dressing and numerous surgical out-patient clinic rooms, and a separate operating room for the orthopedic department.

### Architecture of the Great Charity Hospital.

By Richard E. Schmidt, Chicago, Fellow American Institute of Architects.

Mr. Schmidt's idea of the great charity hospital is an institution which must handle the greatest possible number of patients at the least possible ocst, and give them the greatest amount of intelligent care; and it should be arranged architecturally so that the physician, nurse, and the common employee can do the greatest amount of work with the least expenditure of time and energy. He thought very much could be done in this respect by proper grouping of the buildings and a proper arrangement of the unit. His picture of such an institution was a group in which the administrative and service buildings of all sorts should form the center, and ranged about them should be the patients' quarters of every description. The central unit would include the administration building, as the gateway of the institution, the business offices, and the information bureau. This group should also include the admission department, with all of its auxiliaries, examination rooms, dispensary, the out-patient service, baths for the admission of patients, clothes lockers, and the clothes sterilizer. The necessity for this sterilizer brought up the further proposition that, since sterilized material is necessary in all parts of the institution, medical and surgical, children and maternity, and since this administration group is at a point nearest to each one of the patients' units, the whole sterilizing plant of the institution should be there also, and should have the immediate and exclusive care of an expert in sterilization.

The stores of the hospital should also be a part of this central group, because stores of one sort or another are needed at every point of the institution, and this point is the nearest to all other points. The kitchens and diet rooms should also be of this center group—first, because they can be close by the stores, and, second, and certainly the most important point of all, so that the food can be quickly transported to patients for service to them in an appetizing and palatable condition.

The pathological department is another bureau that should be a part of this central group, including the morgue, the autopsy room, the chapel, rooms for coroner's inquests and for witnesses. Included also in this laboratory suite must be the bacteriological department, with its serums and vaccines, with its incubators and refrigerators for the preparation, keeping, and care of the various serums and vaccines and autovaccines. In such an institution there would be auxiliary laboratories in all of the various services of the institution and the central laboratory should be convenient to all those, and hence a part of the central group. If there be a school or lecture rooms for large bodies of students, these should also be centrally located, because patients will naturally be brought to them from every section of the institution, and patients should be made to travel as short distances as possible.

Mr. Schmidt raised the question whether the operating department should be centrally located and all at one place, or whether there should be a number of surgical operating rooms, each one located convenient to a certain class of patients—that is, an operating room in the children's department, one for the gynecological service, and so on. He drew attention to the fact that the medical profession would not agree on the point as to whether the surgical rooms should all be together or whether they should be separated to cover the various services. There was no question in his mind that the cost of administration would be much higher in the event that the operating rooms were divided. There would be a great expense in energy of the nurses, who in a great number of surgical units, in which only a comparatively small amount of operating was to be done, would have to be on duty all the time, and each one of these units would have to be kept surgically clean; and in the case of several of these suites there would be more surface to keep clean and more items in the way of surgical material. He did not think that the surgeons would make very much of the point of transportation, because they seemed to feel that it did not make much difference whether a patient went fifty feet or three hundred following the operation, but he thought that many of them would insist on a greater amount of segregation of various classes of cases; as, for instance, he doubted whether the general surgeon whose work was mostly aseptic and done under aseptic conditions would agree to the operating work from the genito-urinary section. The whole subject of the location of the surgical operating rooms, Mr. Schmidt thought, would have to be put up to the medical staff of the hospital after both sides of the question had been given them for settlement.

The power plant and laundry, Mr. Schmidt thought, need not be located in this central group, because the drop in efficiency of hot and cold water, steam and electricity, is a negligible quantity over such short distances as are contemplated in this grouping.

He thought there should be one large underground corridor, say 16 feet wide and 7 feet high. A partition would be built separating this corridor into two sections, one 7 feet wide and the other 8 feet wide, leaving a foot for the thickness of the separating wall. In the narrower section would be carried all the pipes for the service of all the buildings, and in the wider section would be the passenger and freight service of every sort. He thought all the buildings connected with this great corridor should be supplied with elevators of the automatic type, and showed that, while for installation such elevators cost little more than man-operated apparatus, their administration would be very low, because they would do away with the wages of operators. He insisted that present-day automatic elevators are sufficiently "fool-proof" to justify their installation and use with a feeling of entire safety.

In regard to the laundry, Mr. Schmidt thought that it made very little difference whether soiled and clean laundry goods were transported one hundred or six hundred feet.

As a part of his paper, Mr. Schmidt showed a number of lantern slides, giving the architectural grouping of several European hospitals, merely to show the conception of European architects of the arrangement of the hospital buildings.

### Architecture of the Modern Hospital.

By L. A. Lamoreaux, of Minneapolis.

The next paper was by Mr. L. A. Lamoreaux, architect, of Minneapolis, on the subject of "Architecture of the Modern Hospital for Contagious Diseases." The central thought around Mr. Lamoreaux's paper was one in advo-

cacy of the many-story or block type of hospital against the pavilion type. He thought the administration units could be on the lower floors, including the nurses' homes and dwelling places for employees when it became necessary to house all these people, and that the upper stories could be used for patients, where the air and sunshine were freer and more plentiful, and where the noise and dirt of the city or neighborhood would not reach them. If Mr. Lamoreaux were given the task of building a general hospital and contagious department in one inclosure, he would consider it ideal to put it all in a block type building—say, a hospital to care for 2,000 patients. He would place the patients all in the upper stories and the administration and the help below. He would have everything under the one roof, excepting the contagious hospital, power plant, kitchen, and laundry, which would be in another building. He would take one-half the block for the hospital proper. On the other half of the block he would put the contagious hospital, and between the two he would put the power plant, kitchen, and laundry. If he were going to build this building in Minneapolis, he would build it just as office buildings are built today—probably of concrete. At first he would build the necessary number of stories—say, as high as seven—for immediate use, and he would build the side walls and supports so that they would hold seven or eight stories more. Instead of traveling through corridors to get from one service unit to another, he would go up and down in the elevators, and he would be able to travel in fifteen to thirty seconds from one service unit to another, whereas by means of corridors it would take that many minutes. Mr. Lamoreaux thought it would be ridiculous to spend as much as $2,000 or $2,500 per bed for a hospital building. He thought that less than half of this would be extravagance. He told of conditions in Minneapolis, where the city owned two-fifths of a block, on which they are now starting a building to take care of a thousand patients, and also a nurses' home.

The new isolation hospital which the city intends to build, and of which Mr. Lamoreaux is the architect, is to be T-shaped, he said, with dimensions on the ground of about 120 by 100 feet. In one section of the "T" were the nurses' rooms, some rooms for the help, and two elevators. Each elevator has separate terminals, and the class of patients that may ride on one elevator need not come in contact with the other in any way—indeed, one of the elevators need not come in contact with the contagious part of the hospital at all. The other section cross of the "T" is divided into private rooms on the several floors, and observation rooms. In the observation part of the building the doors are what is known as "Dutch" doors—that is, they are built in two segments, an upper and a lower, so that, for instance, the lower segment can be kept closed and prevent sick children from circulating through the building and yet leave plenty of fresh air moving about everywhere. The partitions are of glass, especially on the corridors, so that nurses walking along can see what is going on in the rooms. In the main section of the "T" are the wards. In no ward are there more than eight patients.

Mr. Lamoreaux told of a recent visit he made to some eastern hospitals, and he had found in New York as many as fifty-one patients in a ward and there were deplorable conditions. He found two patients occupying one bed, one at the head and one at the foot.

Nearly all partitions in Mr. Lamoreaux's new hospital are of glass. All the utility rooms are concentrated as much as possible in the center of the "T" or at the junction of the vertical section with the cross. The clean-up rooms are there among others, where the nurses can pass into a room in which are the lavatories, and they must pass first into the clean room and from there into the open-air corridor. The doors are so arranged that they cannot be opened from the outside; for example, a person enters the soiled room and the door cannot be opened to let him pass back into the ward. He has to go through the whole process and out the other way. Another central feature of Mr. Lamoreaux's architectural scheme is the clean-up department for patients as they go out. This constitutes a bath room and a clean room, where the patient takes his clothes and goes from there onto one of the elevators.

There are to be no dumb waiters in Mr. Lamoreaux's hospital, the intention being to use regular elevators to convey food and material as well as passengers. There are to be arrangements for sterilizing all dishes and kitchen utensils as they pass out of the infected quarters and before going to the kitchen. This is built on the plan of the mattress disinfector, the dishes going in one end infected and coming out the other end clean. This disinfector occupies a position between two rooms, the soiled end in one room and the clean end outside the infected quarters. In Mr. Lamoreaux's hospital are also to be installed the new style ward incinerators, one for each ward, and through the several stories they are placed one above another, with exit for gases through one flue.

On this plot of ground and in this way Mr. Lamoreaux proposes to build eight stories, designed to accommodate three hundred patients and designed also to add five stories more when needed. A new feature of this institution is that many of the rooms are fitted with live steam exits, so that live steam can be turned into the rooms for disinfecting purposes. It is intended to allow visiting freely in this institution, but all visitors and patients will be separated by a glass partition, so that a mother can visit her child without coming in contact with it, and hence without danger of infection. All infected clothing in this building is to be sent to the laundry through a chute open at top and bottom, the whole chute being outside the building. The bottom of the chute will enter directly on one part of the laundry, and the clothing will be sterilized when it arrives at this room before being sent on to the laundry proper.

### Equipment of a Small Hospital—Making Over a Dwelling House.

By John Allan Hornsby, M. D., Chicago.

Dr. Hornsby wrote his paper for the benefit of the very large number of medical men who, he says, are finding themselves unable to do good work in the mediocre hospitals of their communities and who are looking about for some means by which they can help themselves and protect their patients. Dr. Hornsby showed lantern slides of a number of small dwelling houses on the edges of small cities and towns that had been run down by the ingress of business activity, and that had consequently been abandoned by their occupants. By a few strokes of the pen in the lantern slides, Dr. Hornsby showed the transformation of these dwelling houses into very acceptable small private hospitals, in which good work might be done. He gave the costs of these alterations, which were insignificant in amounts. The reader of the paper also equipped one of these small institutions complete, beginning with the sterilizers, which he said were the only absolutely necessary items of equipment other than those of an ordinary dwelling house, and, including the furnishings, sur-

gical and medical appliances, linens and cottons, kitchen and dining room, and the housekeeper's paraphernalia, Dr. Hornsby gave $1,000 as practically the whole cost of transforming and furnishing one of these dwelling houses of sufficient size to accommodate ten or fifteen patients.

### Possibilities in the Routine Practice of a Small Hospital.

By Herbert C. Cole, M. D., Bogalusa, La.

The next paper read was on the program for the second day's session, but Dr. Cole wished to use lantern slides, which were available at the first session and would not be thereafter. Dr. Cole is chief surgeon for the Great Southern Lumber Company, which owns and operates the largest saw mill in the world at Bogalusa, Washington Parish, La., about a hundred miles north of New Orleans and close to the Mississippi line. The town of Bogalusa is located on a hill in the midst of hundreds of thousands of acres of swamp. The lumber mill works 10,000 people, about half of them negroes, and all these employees with their families make up the town of Bogalusa. Dr. Cole went into detail as to how, in the midst of these surroundings, he had built a hospital for $40,000 that could accommodate sixty or seventy-five patients. The building he showed on the screen was U-shaped, the connecting part being the administration building, and one of the horns was for the occupancy of white patients and the other for negroes. A second story over the administration building was a home for the nurses and the superintendent of the hospital. In a number of lantern slides Dr. Cole showed how in an isolated place good surgery could be done and how patients could be nursed in an up-to-date, scientific manner. In his operating room, shown on the screen, there was every aid to aseptic surgery—sterilizers, various solutions, sterile water, etc.—and he showed the "scrub-up" methods, which are those practiced in the large metropolitan hospitals. Dr. Cole described his pathology, which included bacteriology, serum therapy, and vaccine therapy, and even an occasional administration of autogenous vaccines prepared in his own incubators, in his own laboratories, by his own assistants. He told what he was doing about the diagnosis and care of a number of the tropical diseases, including hookworm and pellagra.

Incidentally, Dr. Cole gave a very interesting account of what he conceived to be the duty of a great corporation, such as the one he represented, in the care of its employees. The company polices the town, attends to all its sanitation and hygiene, furnishes water and light to all its inhabitants, takes care of the men and their families during illness, and directs their lives in preventive medicine. The married men, he said, paid 90 cents a month out of their wages for this service, and the single men 65 cents, and the total aggregated enough money to run the hospital and pay the chief surgeon and four assistants, who formed practically the whole medical profession of the community.

### The Selection of Hospital Employees Under Civil Service Rules.

By Leonhard Felix Fuld, M. D., New York.

The second day's session began with the reading of a paper written by Leonhard Felix Fuld, examiner for the New York Civil Service Commission, on the subject of "The Selection of Hospital Employees Under Civil Service Rules."

Dr. Fuld believed, according to his paper, that the best class of employees were to be had by civil service examination, which included physicians, trained nurses, supervising nurses, trained laboratory assistants, clerks, stenographers, and the like. The noncompetitive class, he thought, were made up of employees who are paid such small salaries that the institutions are unable to obtain people of sufficient capacity to pass any sort of examination; such help, for instance, as orderlies, domestics, and other minor employees. He thought that the incumbents of these noncompetitive places, however, should be identified clearly as to their past, and that each one's personal history should be thoroughly worked up before he or she was put to work. Dr. Fuld had a third class of institution employees which he called the "labor" class, which he again divided into a subclass of laborers and a subclass of mechanics. This laboring class should be compelled to pass a physical examination, he thought, as to their capacity to do the work intended to be done, and a personal history examination. In the subclass of mechanics, he thought, their wages would make it possible to examine them as to their qualifications to perform the duties for which they were being employed. Pupil nurses Dr. Fuld left out of consideration, because their qualifications and eligibility were taken care of by their superiors in the training school just as pupils were accepted or rejected in any other school. Dr. Fuld doubted very much whether the small salaries paid by hospitals were in reality a saving, because he thought better salaries would obtain the service of so much better people, so that a much smaller number could do the same amount of work. He spoke of the bonus system of reward as an inducement to permanency of service, and which he thought would immeasurably tend to "render less frequent the lapses from a proper mode of life, now so frequently attendant upon pay day in public hospitals." He also urgently advised the employment of men who had served in the United States Army Hospital Corps. He thought their training as orderlies gave them not only considerable skill, but also a discipline in obedience of orders that civilians rarely obtained.

### Municipal Hospitals and Their Relation to the Community.

By Rupert Norton, M. D., Assistant Superintendent Johns Hopkins Hospital, Baltimore.

Dr. Norton was not present to spare anybody's feelings, and he began his paper as follows: "Speaking broadly, it may be said, without fear of contradiction, that the municipal hospitals of this country are a disgrace from almost every point of view, and do not in any respect serve the purpose they should. The exceptions can be counted without difficulty on one's fingers. One of the best is the Boston City Hospital, and the worst, considering the city where it is situated, is the Cook County Hospital of Chicago." After taking to task, in a similar vein, most of the municipal hospitals in this country, Dr. Norton paid his respects to the hospitals of Europe, especially to those in Germany, which he considered the best in the world, and named in particular the municipal hospitals of Berlin, Hamburg, Cologne, and Düsseldorf. One of the reasons, Dr. Norton thought, why the German municipal hospitals were better than those in this country was that the governments over there felt that better work could be obtained, and a more highly scientific care of patients, where the hospitals were directly connected with medical schools. In Germany, he said, the hospitals were showplaces also, like the schools and theaters, and strangers were taken to see them, whereas in this country the attention of visitors was attracted away from these institutions. One of the reasons, Dr. Norton thought, why our municipal hospitals were so inferior was because of our national characteristic indifference to human life. We

were too busy to think about protective devices and preventive methods. He also thought that another very pronounced reason why we were deficient in our municipal hospitals was because we hired political architects to build them, men who were oftentimes absolutely incompetent and who were too busy with their political machinations to take time to inform themselves. A refreshing exception to this rule, Dr. Norton thought, was the case of Cincinnati, where Dr. Christian R. Holmes had given an immense amount of time and had devoted himself to working out and perfecting plans for the new Cincinnati City Hospital. Political spoils was another reason, and political conditions generally, why our municipal hospitals are such failures—the magic "pull" which brought into the hospitals as employees old political henchmen of those in authority.

Dr. Norton did not drop his subject at the stage of fault-finding, but really suggested a remedy, the keynote of which was that "communities are awakening to their physical needs and learning that they need not be the playthings for groups of dishonest politicians." The reader thought that with education of the public the hospitals could be made to grow better, but they would have to be taken out of politics and placed on a basis of efficiency, many signs of which Dr. Norton thought he could see in various parts of the country. Then he spoke of many directions for improved conditions, with which all of us have been more or less familiar. He thought the municipal hospital was fast becoming very much more important in the community than merely a place in which to take care of the sick. He said from it should emanate the community's ideals as to prevention of disease, and, therefore, the methods practiced in municipal hospitals should be of the very latest and most approved kind. He stated the employees ought to be better trained people than they are usually in our municipal hospitals, and superintendents of these hospitals should be selected with more care, although it was rather a matter of personal equation whether a man or a woman, or whether a professional man or a layman, should be placed at the head of the municipal hospital, although he thought that, with some rare exceptions, the best person for the superintendency of such a hospital was a medical man who had been trained in business methods.

One of the vital points touched in Dr. Norton's paper was that of the duty of boards of directors. He said these boards ought to direct things only in an advisory way, and that the superintendent, if he was the proper man, should be left to run the hospital without interference. He should be held to a strict accountability for all his acts, and the conduct of his office should be constantly viseed by their boards and their committees. The superintendent should have absolute authority in the selection of all his assistants, including the superintendent of nurses, matron, engineer, and heads of other departments.

### Hospital and Asylum Workshops—Some Possibilities of Handicapped Labor.

By Herbert J. Hall, M. D., Marblehead, Mass.

The text of Dr. Hall's paper was that "nearly every person in this world can add to the sum of world wealth by his own labor; those who have lost limbs, those who have just recovered from illnesses that make new occupations necessary for the future, the mentally deficient—all these can be taught by intelligent and trained direction to make the most of their handicapped possibilities." Dr. Hall's paper was devoted to a description of his work in the institution at Marblehead, Mass., where special attention had been paid to persons suffering from nervous breakdowns and illnesses of that order, in consequence of which they were compelled to occupy their hands and to do new kinds of labor to make a living. Craft work only was employed, including hand weaving, metal working, wood carving, leather working, pottery, basket weaving, and cement working. Experience had demanded that all these be dropped as unprofitable, excepting pottery, hand weaving, and cement working. These had been made to pay their way, and last year, Dr. Hall said, five people working in the pottery made and sold $6,000 worth of pottery goods. One of these five people was a woman, had been a surgical case, and had profound neurasthenia of long duration.

Dr. Hall gave some other examples where handicapped labor had been made to produce profitably, notably, he said, that last summer a small group of male patients at the state colony in Gardner, Mass., under Dr. LaMoure, produced $40,000 worth of supplies from the hospital farm, which return would not have materialized without the use of handicapped labor. He gave every assurance that the men who worked on that farm were not overworked, and that they were physically and mentally better for their experience. Another example was on the Pacific coast, where Dr. Philip King Brown has within the past two years established a pottery, where a group of convalescent tubercular girls are paying their expenses, a dollar a day, while under treatment.

### The Psychopathic Hospital Idea.

By E. E. Southard, M. D., of Boston.

The next paper read was on the subject of "The Psychopathic Hospital Idea." The paper was prepared and read by E. E. Southard, M. D., director of the Boston State Psychopathic Hospital. In his introduction Dr. Southard made the prediction that the psychopathic hospital and the ideal for which it stands is in its very infancy. In this regard he quoted Pliny Earle's utterance of 1867, "Carbon agglomerated is charcoal; carbon crystallized is diamond. What charcoal is to the diamond such, I believe, is the psychopathic hospital of the present compared with the psychopathic hospital of the future."

The speaker made a plea that the superintendents of hospitals either give their insane patients proper accommodations as dictated by modern psychopathic ideals, or spend their time and energy helping to create psychopathic institutions in which such people can be properly and scientifically cared for. He thinks there is no justification for the use of drugs or mechanical restraint to control irresponsible and disturbed patients. He finds the remedy under five heads: common sense, hydrotherapy, specialized attendance, proper isolation, and more common sense. A good deal of the paper was devoted to the care of alcoholic, especially delirium tremens, patients. He questions whether the time is not coming when acute alcoholism must be cared for in specially devised institutions, and the speaker quoted figures to show that in the institution of which he is the director thirty delirium tremens cases did far better than the records for any general hospital could possibly show. He thinks, however, that a good many so-called delirium tremens patients are not delirium tremens at all; in fact, fifty-four out of eighty-four cases brought to his institution were wrongly diagnosed. He thought the most formidable and perhaps the most important work under the order of psychopathic hospitals is sociological in character and involves an outpatient service. The speaker classified syphilis as perhaps occupying approximately one-third of the attention of the

psychopathic hospital, but spoke hopefully of the future in regard to that particular disease with a suggestion that the problem concerning it is transmedical in character and will require great cooperation of social workers and economists. Dr. Southard spoke of the problems of delirium tremens, of syphilis, and of social service in connection with the psychopathic hospital, not because they include all that was to be done in such an institution, but because those particular problems were of more vital interest to the Hospital Section of the American Medical Association, referring those who cared for the scientific or medical side of the problems to the special works on those subjects.

### Factors Influencing Hospital Costs.

By Thomas Howell, M. D., New York.

Dr. Thomas Howell, superintendent of the New York Hospital, read a paper on "Factors Influencing Hospital Costs." In his paper Dr. Howell drew most thoughtful attention to some items that go to make up the cost of hospital administration, and enumerated some of the things that determine the difference in cost between various institutions of the country. He thought there was justification for a higher cost in city hospitals than in rural institutions because of the complexities of city life and the added cost of nearly everything. The location of the institution he considered a factor—its convenience to markets and its situation as to cleanliness; it would be harder to keep clean an institution in a factory settlement or manufacturing district, and would, therefore, take more employees to keep it clean. The amount of scientific work done had a good deal to do with the total cost. A medical school connection brought up the cost because the demands for a higher order of service would bring corresponding high costs for that service—the character of such service as food, attendance, nursing. In the $3.00-a-day hospital these things are better attended to than in the public hospital that costs a dollar per day. Hospitals in the south, the writer held, other things being equal, should have lower costs than those located in the north, because food and labor are cheaper and the expenditure for coal will be very small. He gave the example, in this connection, of the Winnipeg General Hospital, where the fuel cost foots up 28 cents per day per patient, while in the 1,000-bed Charity Hospital of New Orleans the fuel cost is less than 3 cents per day. Dr. Howell said he knew of hospitals with 250 beds whose pay rolls were from $3,500 to $4,000 a month, and of other institutions with the same bed capacity whose pay rolls were as high as $10,000 and $12,000 per month. In the one case the salary account per patient was about 50 cents and in the other about $1.20 per day. The reason why municipal hospitals had lower per capita costs than other institutions, Dr. Howell thought, were, first, these institutions employed a great deal of convalescent patient labor, which private hospitals did not; and, second, that certain city officials—such as bookkeepers, paymasters, purchasing agents, and the like—do a considerable part of the work of the institution, which in private institutions must be paid out of hospital funds. Dr. Howell thinks that in this country we have settled down to something like a standardization of administration, and he is tempted to conclude when he sees the report of the hospital whose per capita cost is high that that institution is giving better service to its patients and a more scientific service than the one whose cost is low.

One of the significant statements in Dr. Howell's paper concerned the purchase of supplies. He thought that, while large institutions are likely to buy in larger quantities and to obtain somewhat better prices, it is far more difficult for them to enforce economy and prevent waste. In the small institutions the superintendent is able to personally supervise the purchase and use of supplies and to enforce frugality. In the large institutions the responsibility for waste and lavish expenditure is divided in a sense, whereas in the small institution the superintendent must stand personally responsible to a greater extent, and will be more able to give personal attention to matters of such detail as purchase and use of daily supplies.

Finally Dr. Howell thought there could be no great leveling process in the standardization of hospital costs for the same reason that there could be no comparison of costs in two watch factories—the one making $1 watches and the other $50 watches.

### Efficiency in Nursing.

By Gilman Thompson, M. D.

The third and last day's session of the Hospital Section was devoted to a symposium on nursing. Dr. Gilman Thompson's paper on "Efficiency in Nursing" introduced the subject. Dr. Thompson's paper was a study concerning the loss of time and energy in traversing unnecessary distances. He discussed appliances to promote the patient's comfort in bed and to relieve the nurse of unnecessary labor in lifting patients. He attacked what he called a lack of cooperation on the part of training school authorities in these matters of time-saving and energy-saving, and especially in matters concerning the comfort of patients.

Dr. Thompson, in preparation for this paper, had some nurses wear pedometers in several hospitals. He found one day that a nurse walked seven and one-half miles, and the average was about five and one-half miles. This in addition to all the stooping and lifting the nurse had to do, besides the carrying of heavy weights and performing the light bedside services and the necessary services in utility and serving rooms. He found in one hospital that the ward was so long that the farthest bed was 120 feet from the ward kitchen, and that it was the custom to carry trays individually to and from each bed three times a day. He footed up the unnecessary foot service of the nurse, which amounted to about two miles a day in this particular ward, and the food trays and their contents were weighed and found to weigh about fifteen pounds. The nurse, he concluded, had to haul a considerable weight two miles. When he suggested, in this particular instance, that wheel trucks be used, which would carry all the trays at one time, he was met with the objection that the food would reach the patients cold. Finally he took a common wheel stretcher for an experiment, placed eight trays upon it and compared the time of delivery in this wise against the carrying of individual trays. The time required to serve eight patients was two minutes with a truck and ten minutes without. The difference in distance traveled was 74 feet as compared with 240 feet, all of which he thought disposed of the question of cold food and the other alleged inconveniences.

Dr. Thompson took up the question of bed screens and their hauling to and fro. He found that each screen weighed thirty-one pounds and that it took three screens to surround a bed, so that in order to permit a patient to use a bed-pan the nurse had to carry ninety-three pounds to and from his bed and then, of course, carry the bed-pan to and fro, walking a distance of 480 feet in all. He thought leaving the screen at one end of the room

would avoid a great deal of this unnecessary work. He compared the average hospital ward in New York City with the dormitories of the municipal lodging houses, which contain a bed, a small table, and a more or less uncomfortable chair for each person. There are no articles in the ward for the comfort of the patients, no cranes by which a stiff-jointed or fat patient could lift himself up, and, if there were any in the hospital at all, they were always on the surgical side or somewhere else. The objection to articles of comfort and convenience was that they detracted from the symmetry of the ward. There were no large-size beds in this ward for unusually fat patients, although he found in one case a patient who was twenty-eight inches across the hips and who lay on a thirty-two-inch bed. When a wide bed was finally rushed from a department store, it was so low that the nurse could not take care of the patient without back-breaking exercise. He told of a patient who weighed three hundred pounds and who had nephritis, incontinence, bed sores and high blood pressure. There were absolutely no conveniences to take care of her or to turn her in bed for the necessities of nursing. Dr. Thompson thought that the training schools were very much more given to teaching bacteriology, urinalysis, voice culture, and the functions of the ductless glands than they were to teaching the gentle art of making the patient comfortable in bed.

He said the physicians were oftentimes responsible for a lot of carelessness on the part of nurses, because they demanded too many things of the nurse that were unnecessary—as, for instance, they wanted temperatures, pulse, and respiration every three hours when in fact only a few patients needed anything of the sort. In this way the nurses were required to do things which they knew to be unnecessary, and in consequence of which shirked, and thus the physician helped to build up a regime of inattention, carelessness, and indifference. Rotations in service of physicians, he thought, were many times responsible for poor efficiency. One doctor who happened to be serving three months, and who demanded a certain line of conduct on the part of the nurses and certain sorts of care for his patients, would eventually leave, and the next physician would want something entirely different. He claimed that a cure for this, in a large measure, would be due to charging physicians with responsibility for the conduct of their wards and giving them continuous service. Dr. Thompson tried to obtain facts concerning the health of young women pupils in some of the training schools, which he found extremely difficult, but he did finally get some figures, which showed that in a training school of 119 pupils there was only one and one-half days of illness per nurse for an entire year, which he said would compare favorably with any young woman's seminary or school that he knew of. In conclusion, Dr. Thompson stated that if the nursing system of today was being overweighted with theory and pedagogy, which he thought unquestionably was true, physicians have no one to blame but themselves through their lack of cooperation and the increasing tendency on their part to permit training schools to be managed by outside influences, by uninformed persons, and to permit them to manipulate their own curriculum and arrogate to themselves responsibilities which are primarily the function of the doctor.

### The Trained Nurse of the Future.

By Richard Olding Beard, M. D.

If Dr. Thompson's paper was a criticism of nursing methods, that by Dr. Richard Olding Beard, of the University of Minnesota, on "The Trained Nurse of the Future" was even a severer criticism, but Dr. Beard took the opposite tack. The theme of his paper rested on the proposition that nurses must be of a higher order of women to start with, educationally and intellectually, and that the small hospitals which did not have complete nursing services should not be permitted to train nurses at all, but they should be compelled to employ graduate trained nurses to nurse patients in their hospitals, and, if they were unable financially to do this, the hospitals which could not conform to that idea should be closed and their work turned over to institutions that could live up to these ideals. Dr. Beard thought that the training schools up to the present time did not represent any system of well-thought-out line of endeavor, but that, like Topsy, "they just growed." He thought the time had come, however, when some sort of system must be settled upon, and there was more danger of getting a system that was too low in its standard than of getting it too high.

The field of the trained nurse, Dr. Beard thought, had not been nearly defined, and her activities were broadening every day. She is employed not only to take care of the sick in the hospital and in the home, but she occupies a permanent place in the office of the physician and aids him materially in his professional work, including the performance of his private laboratory work. Trained nurses are in the public schools, looking after the health of the children, and here they are assistants to the medical officers also, and from the school they reach into the homes of the children, becoming the sanitary advisers of their parents, and are thus indefinitely engaged in bringing the principles of preventive medicine within the reach of the people. Trained nurses are being employed as resident supervisors in women's departments of universities and state colleges and in private schools. They are employed almost exclusively as the relief agents in the social service bureaus of the country in the garb of visiting nurses. These trained nurses, too, he thought, were becoming the most effective agents in the constructive work of the great philanthropic enterprises concerned in the problems of child welfare and infant mortality and mental hygiene. They are employed in the army and navy hospitals and in the fields of the foreign missions. They are finding a place in the great department stores of the country, and there the work they do speaks for better conditions among the employees, better sanitation, and better hygiene.

Dr. Beard said that the development of the trained nurse was shown at four points of social movement: first, in the demand for legislation, creating state boards of examiners to regulate the practice of nursing; second, the tendency to create definite standards of education of nurses; third, the development in certain large centers of a movement toward university training for nurses; and fourth, a disposition on the part of the public, as well as the nursing profession, to measure up the fitness of hospitals as places in which to train nurses.

Dr. Beard spoke from the standpoint of a university man, as a part of a magnificently endowed institution, and he had very little patience with the small hospitals; in fact, he was quite sure that many of the present educational misfortunes in nurse training, of which so much is being heralded about the country, would be cured when "the smaller private or special hospital with less than an average daily complement of thirty patients, not beds, should be debarred by law from the maintenance of training schools," for which their service he considered inadequate. He thought training schools ought to be standards, and should be confined to general hospitals of standard capacity and equipment.

### Obligations of Hospitals and the Public to Training Schools for Nurses.

By Joseph B. Howland, M. D., of Boston.

The last paper of the session, and of the year, was read by Dr. Joseph B. Howland, of Boston, on the subject of "Obligations of Hospitals and the Public to Training Schools for Nurses." Dr. Howland, in his paper, began with some interesting side-lights on the history of nursing in this country. The first training school in America, he said, was established in 1872 at the New England Hospital for Women and Children. Today there were approximately 1,100 training schools. In that first training school there were twelve lectures given to the class—some by the visiting staff, and a small amount of instruction by the interns in taking and recording temperatures, pulse, and respiration. The rest of the nurse's education was acquired at the bedside in the ward. Medicines were given from numbered bottles, and the pupils had not the slightest idea of what the bottles contained. The lecture course usually at this time includes biology, bacteriology, materia medica, medical and surgical diseases, dietetics, and lectures on invalid occupations, massage, bandaging, and an infinite number of other subjects. The only duty the nurse had in those early days was private nursing in the home, except for the very few who became superintendents of training schools and small hospitals. In the early days of nurse training there were no examinations for admission or other admission qualifications, while at the present time there are nurses' registration laws in thirty-seven states. Dr. Howland thought that, while there is a great and apparently growing scarcity of nurses in all the fields of nurse occupation, when women of intelligence and education come to realize that long hours of hard, unnecessary manual labor and poor conditions do not exist, and that the remuneration for nursing service is fairly abreast of that in other occupations, very many young women who are now becoming secretaries, stenographers, bookkeepers, librarians, and teachers would seek the nursing profession as a life occupation.

Dr. Howland finds that there is definite and country-wide recognition of the necessity to train nurses along higher levels, and he named a number of institutions that had already invaded this field of higher training—Simmons College of Boston, the University of Minnesota, Columbia University, the Springfield (Mass.) Technical School, the Technical School of Toronto, Can., and others.

M. E. McCalmont, in the July number of the *Brickbuilder*, states that there is a no more neglected subject in hospital construction than the problem of lighting. The A B C of the subject has scarcely been formulated. The nervous irritation, conscious or unconscious, which results from a well person being obliged to face directly for any length of time a glare of light, must become at least a subconscious agony in the case of sick persons. Yet for years we have placed glaring ceiling lights in the private rooms, sublimely unconscious or cruelly indifferent to the acute discomfort of and pernicious effect on the patient.

The Brehon laws of early Ireland, perhaps the first legal recognition of the hospital as an institution, provided that the hospital must be kept free from debt, must have four doors for ventilation, and that a stream of water must run free through the middle of the floor. "Dogs, fools, and scolding women" were to be kept away from patients.

## BRITISH MEDICAL ASSOCIATION MEETING —HOSPITAL DISCUSSION.

### "Hospitals in the Melting Pot"—Medical Profession Disorganized—Proposed Program of Reconstruction.

London, July 26, 1913.

During the last week the eighty-first annual meeting of the British Medical Association has been held at Brighton under the presidency of Dr. Ainslie Hollis. Yesterday the Section of Medical Sociology devoted its energies to a discussion concerning hospitals in relation to the state, the public, and the medical profession, thus affording, if such were needed, further justification for the statement that medical opinion certainly, and lay opinion in less measure, is grievously disturbed at the present moment in respect of certain fundamental questions affecting medical institutions.

Dr. Ryle, the cultivated and dignified president of the section, opened the day's proceedings with a few thoughtful words, in which he emphasized the proposition that the state, the doctor, and the individual are all concerned in the organization of the hospital system. He then made way for Professor Benjamin Moore, of Liverpool.

Professor Moore, who, although of course a medical man, does not practice, and who teaches biochemistry at the University of Liverpool, has of recent years become widely known as one who takes a keen interest in medical sociology, writing freely on the subject. His name is connected, in the minds of most of us, with somewhat drastic schemes of medical and social reform, including the complete reorganization of the medical profession as a state service, analogous to that of the army, the police, or the post office. As a necessary corollary to the organization of a state medical service comes, of course, the organization and control of hospitals by the state; and few, I fancy, would have been surprised had Professor Moore declared, with Sir William Osler, that the day for voluntary support of hospitals has gone by. But he did not proceed so far. On the contrary, after pointing out that the hospital of the future must fulfill three functions—those of prevention of disease, of treatment, and of advancing knowledge—and that there must be some rearrangement of the present system or lack of system whereby municipal authorities, poor law authorities, and voluntary organizations are each and all separately engaged in the task of hospital provision, he went on to declare that a new and unified system need not lead to the loss of voluntary help from present workers, or to the loss of pecuniary aid from present donors. Indeed, he was careful to insist that, although the signs of the times everywhere point toward increased appreciation of the work of hospitals, and rapid approximation to a system of national hospitals, yet, with the organization of a national or municipal system we must be careful to preserve the glorious example that has been set us in the past of personal charity and devoted effort. Nor does he even expect that, with the formation of a state or municipal system, such loving care for the sick as has been exhibited in England in the past will pass away. As he said with truth, such arguments as are now used to oppose the passing of the voluntary system from the hospital world have always been used whenever, in respect of any system, the question of substituting a publicly controlled organization for purely voluntary work has been mooted. Experience, how-

ever, has shown us that, whenever, in the course of the development of local government, formally constituted public bodies have taken over duties previously performed by unofficial associations or individuals, the personnel of those interested has been hardly changed. So will it be that, as hospitals are brought under municipal control, there will still be scope for personal and effective work by those who seek neither emolument nor reward.

Professor Moore illustrated his argument by reference to the parallel case of modern municipal universities. Here financial support is derived in part from students' fees, in part from voluntary gifts, and in part from state or other contributions derived from the proceeds of taxation. So must it be with the controlled hospital of the future, that there are grants from the rates, gifts from the charitable, and fees from those who can and should pay.

Again, looking forward, Professor Moore expressed the hope that ultimately every practicing doctor in a neighborhood will be brought into some form of organized relationship to the local hospital, which, under local public control, ought to be a part of the coordinated machinery set up for the maintenance of the public health in any district. It was suggested, too, that a convenient unit of population to be served by any one hospital would be represented by an urban district of 100,000 persons, while the hospital itself should contain about 100 beds, and would be connected with the work of some sixty doctors.

In his final words Professor Moore hinted, if he did not actually restate, his belief in the future necessity for the creation of a state medical service, in which every medical man should have some definite function in connection with hospitals; so that, while some should conduct the present in- and out-patient services, others should visit sick persons in their own homes. Professor Moore's address, which was accorded very hearty indications of approval, was succeeded by a paper read by Dr. Gibbons, who, though not a medical man, is well known for his important and informing book on medical benefit in Germany and Denmark. He described for us the working of the municipal hospital in Germany, giving a lucid and connected account of the machinery whereby hospitals are in that empire created, and of the methods by which they are administered. The fact that there has been such a large increase of hospital accommodation in Germany in recent years received due comment and explanation, it being suggested that the spread of insurance on the one hand and the desire for institutional treatment on the other were partly responsible. It was said that, while payment for treatment has to be made in every case (by the poor law department, by the insurance societies, or by the patients themselves), in different cases the payments made bear different proportions to the expenses incurred; and at the same time there are differences in the accommodation and food provided.

The disturbing feature is the enormous increase in the cost of providing hospitals of late years, and, moreover, the very great variation that obtains in different instances in the cost per bed. Dr. Gibbons said that there is an increasing feeling in Germany that, though it is well to take care of the ratepayer when sick, yet he deserves some consideration when well.

An interesting point made was that the cost of nursing is also increasing, although, when the nursing service is provided, as it sometimes is, by religious orders or associations, the expenditure in this direction is kept down.

In concluding his remarks, which, together with Professor Moore's paper, will be printed in the *British Medical Journal* for August 2 of the present year, Dr. Gibbons declared that, though there is much to admire in the German system, yet it is not wholly satisfactory, nor perhaps is it wholly to be commended as applicable to a country such as Great Britain, where the genius and habits of our people are not entirely Teutonic. Still, it must be confessed that Dr. Gibbons hardly indicated—perhaps he did not feel called upon so to do—in what direction he thought the German system should be amended, or of what modifications he believes it to be susceptible in order that it may be made more suitable for the British Isles.

Professor Dr. Pfeiffer, director of the State Hospital at Essen, in an address couched in excellent English, and admirably read, followed with some account of the German hospital system from an internal point of view, and mentioned that it is incumbent on those medical students who desire to enter into general practice to serve, for at least a year after qualifying as a resident officer, in a state hospital. Surely a most excellent plan, and one that we wish could be adopted in this country, where the shortage of candidates for resident appointments—as house surgeons, house physicians, and the like—is being seriously felt. For one of the curious consequences of the greater care now taken by the state of the sick in England is that more and more do young men, on becoming qualified, pass at once into one of the public medical services, so that fewer and fewer fit themselves for general practice by learning, as interns, to deal with emergencies and to assume responsibility.

Professor Dr. Grober, of Jena, who succeeded Dr. Pfeiffer in the rostrum, while covering much of the ground that had been occupied by the preceding speakers, yet contrived to impress his own very decided and forceful personality on the gathering. He told us that, while on an average some five beds per thousand of the population were provided in the German public hospitals, yet this was not enough, and that the increasing demands for accommodation in hospitals and for expenditure on and at hospitals was truly enormous. Yet, while in great part this increased expenditure is due to what the speaker called the senseless demand for pure luxury on the part of the working classes, on the other hand it is due in great part to the increased cost of land, of building materials, and of labor, while at the same time the demand for expensive technical fittings does not diminish. It is not easy, then, to see in what way expenditure can be kept down, although, as has been said, idle luxuries and architectural extravagances must be dispensed with. Another point made, and one amplifying the remarks of Dr. Gibbons, was to the effect that, on account of woman's emancipation, the desire to be a nurse has notably diminished in Germany, so that there is prospect of very real difficulty shortly occurring in finding adequate supplies of nurses at a tolerable rate of remuneration. An excellent point made by Dr. Grober was that, since private as well as public hospitals are in Germany subject to state regulation—for private clinics have to conform to certain ordinances—there is no monopoly, while at the same time there is efficient control. That such conditions should obtain, now that the "hospital habit" is becoming fixed, is surely important. Dr. Grober insisted on the educational value of the hospital, not merely in respect of bodily health, but in other ways, and suggested that actual weakening of the moral fiber of a nation might ensue if absurd luxury is to be inculcated by example during residence in hospital wards. He suggested, moreover, that something might be done in the direction of grading hospitals, and that institutions of a rather different character from some

of those lately built might be provided, in situations where land is not expensive, in which the more chronic invalids might be received. Such institutions, the Professor, with delightful naivete, thought might be made more "homelike" in character. It occurred to some of the audience that a general provision of homelike institutions might lead, in a few years, to a large part of the population living on the rates in such places. We know that the inhabitants of the Scilly Isles are said to "eke out a precarious livelihood by taking in each other's washing," but the idea of a large portion of a nation boarding themselves out in hospitals of a homelike character is even better. Professor Grober, however, probably meant that such secondary institutions as he has in mind should be severely plain and businesslike, and his idea has much to commend it.

Again, it was urged that it would be well for the public to have increased knowledge of hospital necessities and methods of administration—in a word, publicity is needed. At the present time the medical profession is held responsible for all that occurs in hospitals, yet, in every German hospital at any rate, the doctors are not necessarily supreme. There are lay directors as well as medical directors. Truly enough, as Professor Grober said, if the doctors are to be held responsible, they must be given administrative power. To secure such control is one of the aims of the Bund, the professional organization or "trades union" of state hospital doctors, that has already been so successful in obtaining many desired reforms, and that unites, in such whole-hearted fashion, the state medical service in Germany.

On the whole, in Dr. Grober's mind there is, as he said, little doubt that things are really going on very well in Germany, and will go on still better. One desideratum there does exist—namely, the supply of a sufficient number of good medical men, who are not only well equipped professionally, but who are capable administrators.

Professor Grober's paper was really an excellent one. Clear-cut and definite ideas were firmly expressed, and the impression left on the mind of the audience was that in the author we had a notable justification for the remark, attributed by Professor Lindsay, of Belfast, to an observant lady, that "really, these Germans are so horribly efficient."

Sir Henry Burdett, who followed Professor Lindsay in the debate, took occasion to restate some of the views that he expressed at the Oxford meeting of the Hospitals Association, but carried his audience with him in declaring that politicians are the curse of the sick, and care only for hospitals and health matters when served up as an election dish. Of course, any politician who takes a serious interest in these questions becomes a statesman; so perhaps the dictum is not so far wide of the mark.

Sir Henry has a notion, to which he attaches some importance, that the voluntary system, as we call it, may yet be saved if only the state will grant loans for building hospitals which would admit paying as well as nonpaying patients, and he says that he sees no reason why such loans should not be granted to hospital corporations as freely as to municipalities. Yes, but municipalities hypothecate their rates and other assets as security, and no municipality would "go surety" for a hospital unless control were to be granted. If control be granted, then a state of affairs indistinguishable from that now obtaining in Germany, with the exception that some charitable donations and bequests might still be made for special purposes, would obtain. The voluntary system would indeed then break down.

The impression left on the mind by the speeches was: that the voluntary system, as we know it now, is doomed; that some approximation to the German system will inevitably occur; that probably this will come about through municipalities being granted control in proportion to the aid they bring; and that the English hospital of the future will be, as most things English are, a perfectly illogical, unjustifiable, but nevertheless admirably successful, institution. In it there will be a curious and quite inconsistent blend of state aid, municipal control, and voluntary or charitable assistance. In such hospitals, rich, middle class, and poor will be admitted—probably each class in different pavilions and at different rates of payment. Whether, as in Germany, all kinds of ailments, infectious as well as others, will be treated in one huge institution, it is difficult to say. Probably we shall, as at present, draft our "fever" cases and our "mental" patients to special hospitals or asylums. Whether paying patients in municipal hospitals will be attended by their own doctors or by the hospital staff it is hard to say, but perhaps on this point, too, there will be compromise.

One thing alone is certain. Our hospital system is in the melting-pot and the medical profession is in a state of disorganization.

F. G. Crookshank, M. D.

### Employment of the Insane.

The director of the provincial insane asylum of Lublinitz in Germany, according to the *Zeitschrift fuer Krankenanstalten*, Vol. 9, 1913, No. 22, reports that he has introduced the handloom and weaving as a means of employment for his patients. This form of occupation has found a foothold in several institutions in Sweden, Ireland, Germany, and Italy. In Sweden it has been possible to train suitable patients to such a degree of skillfulness as to be able to make imitations of French tapestries. This is, of course, the exception. On the other hand, it has been possible to arouse an astonishing amount of interest and zeal in individuals who had previously sat dull and indifferent to their environment.

Quite a great deal of difficulty was encountered at the beginning in first getting the proper looms and then in securing an efficient instructor. After the preliminary difficulties were mastered, however, it was possible in one year to earn more than one-half the cost of the looms and the raw material used.

All the material woven was for the use of the institution, such as the following articles being made by the patients: toweling, cotton for shirting, tablecloths, aprons, woolens for men's and women's garments and for blankets, cloth for cleaning kitchen utensils, etc.

The very self-evident benefits to be derived by patient as well as institution certainly should commend themselves to those connected with asylums for the feeble-minded and the insane.

In an exhibition of the Philippine health department held in Manila recently one of the most popular exhibits was an operating "infant feeding" booth. A trained nurse from the General Hospital showed how it was all done—the washing of the bottles under sterile conditions, the cleaning of the nipples, the washing of the utensils, preparation of formula milks, and the feeding of the baby. "Before" and "after" babies were also shown. On the whole, it was a wonderful demonstration to people who had been accustomed to losing most of their babies during their infancy.

# THE BOSTON MEETING OF THE AMERICAN HOSPITAL ASSOCIATION.

## The Program—An Anticipation.

TUESDAY, AUGUST 26.

10 A. M.

Registration and enrollment.

MORNING SESSION—11 A. M.

1. Invocation—Right Reverend William Lawrence, Bishop of Massachusetts.

2. Address of welcome—Hon. John F. Fitzgerald, Mayor of Boston.

3. President's address—Dr. Frederic A. Washburn, Administrator Massachusetts General Hospital, Boston, Mass.

4. Report of Committee on Medical Organization and Medical Education—Dr. Rupert Norton, Assistant Superintendent Johns Hopkins Hospital, Baltimore, Md.

AFTERNOON SESSION—2:30 P. M.

1. The Relation of Hospital Efficiency to the Efficient Organization for Home Nursing—Mr. Richards M. Bradley, Boston, Mass.

2. The Grading of Nurses—Miss Mary M. Riddle, Superintendent Newton Hospital, Newton Lower Falls, Mass.

3. Report of Committee to Consider the Grading and Classification of Nurses—Miss Charlotte A. Aikens, Chairman, Detroit, Mich.

WEDNESDAY, AUGUST 27.

SECTION OF LARGER HOSPITALS IN THE LOWER AMPHITHEATER OF THE OUT-PATIENT DEPARTMENT AT THE MASSACHUSETTS GENERAL HOSPITAL.

MORNING SESSION—10:30 A. M.

1. Inspection and Standardization of Hospitals—Dr. John Allan Hornsby, Chicago, Ill. Discussion by Dr. Ernest A. Codman, Boston, Chairman of Committee on Standardization of Hospitals, Clinical Congress of Surgeons.

2. Record Keeping at the Massachusetts General Hospital—Dr. Byam Hollings, Assistant Administrator Massachusetts General Hospital.

3. Report of Committee on Hospital Construction—Dr. John M. Peters, Superintendent Rhode Island Hospital, Providence, R. I.

SMALL HOSPITALS' SECTION AT THE COPLEY-PLAZA HOTEL. MISS MABEL MORRISON, VICE-PRESIDENT, CHAIRMAN.

MORNING SESSION—10 A. M.

1. How the Small Hospitals May Be Made Self-Supporting—Mr. G. W. Olson, Superintendent Swedish Hospital, Minneapolis, Minn. Discussion.

2. Ambulance Service for Small Hospitals—Miss Margaret M. Moore, Superintendent Jackson City Hospital, Jackson, Mich. Discussion.

SMALL HOSPITALS' SECTION (CONTINUED).

AFTERNOON SESSION—2:30 P. M.

1. What the American Hospital Association Can Do for the Hospitals of America—Mr. E. P. Haworth, Superintendent Willows Maternity Sanitarium, Kansas City, Mo. Discussion.

2. The Employment of Third-Year Pupils as Special Nurses—Miss Mary Alberta Baker, R. N., Superintendent St. Luke's Hospital, Jacksonville, Fla. Discussion led by Miss Nora D. Abbe, Samaritan Hospital, Ashland, Ohio.

SMALL HOSPITALS' SECTION.

EVENING SESSION—8 P. M.

ROUND TABLE.

1. How counteract the pauperizing effect of charity hospital services for people who can pay partially or entirely for their care?

2. Is a preliminary course feasible where the high school standard for admission has not been fully adopted?

3. What are some of the advantages with paid instructors for the lecture course in training schools?

4. What is the most ethical means of advertising small hospitals?

5. Should not the use of typhoid serum be made obligatory in training schools?

6. The employment of nurses in preference to interns as anesthetists.

7. The social side of training school life.

8. The prevention of disease among pupil nurses.

9. The relation of the hospital to the organized charities of a city.

10. How best secure the loyalty of nurses?

THURSDAY, AUGUST 28.

MORNING SESSION—10 A. M.

Report of Membership Committee.

Report of Treasurer.

Report of Auditing Committee.

1. Report of Committee on Out-Patient Departments—Mr. Michael M. Davis, Jr., Director Boston Dispensary, Boston, Mass.

2. The Hospital and Dispensary and Social Reform—Mr. Sidney E. Goldstein, Director Free Synagogue, New York, N. Y.

3. Hospital and Asylum Workshops: Some Possibilities of Handicapped Labor—Dr. Herbert J. Hall, Marblehead, Mass.

AFTERNOON SESSION—2:30 P. M.

1. National Insurance Act as It Affects Voluntary Hospitals and the Medical Profession of Great Britain. The Effects of the Insurance Act on the Hospitals of Germany—Dr. D. J. Mackintosh, M. V. O., Medical Superintendent Western Infirmary, Glasgow, Scotland.

2. Certain Bearings Upon Hospital Problems of Compulsory Insurance and Workmen's Compensation—Dr. David L. Edsall, Massachusetts General Hospital, Boston, Mass.

3. (Subject to be announced later)—Conrad W. Thies, Esq., Honorable Secretary The British Hospital Association, Westminster, S. W., England.

EVENING SESSION—8 P. M.

Organization and Methods of Social Service as a Part of Hospital Work.

FRIDAY, AUGUST 29.

AFTERNOON SESSION—2:30 P. M.

1. Report of Committee to Memorialize Congress to Place Hospital Instruments on the Free List—Rev. George F. Glover, Chairman, Superintendent St. Luke's Hospital, New York, N. Y.

2. Report of Special Committee to Outline Standard Course in Hospital Administration—Dr. W. L. Babcock, Chairman, Superintendent Grace Hospital, Detroit, Mich.

Other Committee Reports.

Report of Committee on Time and Place of Sixteenth Annual Conference.

Report of Nomination Committee.

Election of Officers.

Introduction of President Elect.

Adjournment.

FRIDAY, AUGUST 29.

MORNING SESSION—10:30 A. M.

1. Report of Committee on Hospital Finances and Cost Accounting—Dr. William O. Mann, Superintendent Massachusetts Homeopathic Hospital, Boston, Mass.

2. The Private Patient's Relation to the General Service—Dr. Charles H. Young, Assistant Superintendent The Presbyterian Hospital, New York, N. Y.

3. The Question Drawer—Conducted by Dr. R. W. Bruce Smith, Provincial Inspector of Hospitals, Toronto, Ontario.

There are many good things to be found in the program for this year, and almost the entire field of hospital architecture, equipment and administration is covered.

After the president's address—which, of course, we are not permitted to anticipate—the first paper will be that of Dr. Rupert Norton, which is in the nature of a report on medical organization and medical education.

No doubt Dr. Norton will tell us of the progress made in Johns Hopkins Hospital and the attempts at that famous institution to rehabilitate the medical staff by placing medical men on salary and employing all their time. It is understood there have been many difficulties in the way of the success of this ideal plan, and that it is not yet an accomplished fact. Dr. Norton will tell us also about the new staff organization of the Massachusetts General Hospital and that of the medical department of the University of Minnesota. The prediction may well be made that staff organization, with a chief of each department, is one of the things assured for the near future, and when that time comes the school hospital superintendent and the administrative officers generally will find their work made far easier in that there will be one staff officer to confer with and to make plans with instead of a number.

Mr. Bradley's paper on "The Relation of Hospital Efficiency to the Efficient Organization for Home Nursing" will give the writer of the paper an opportunity to help settle the very much befuddled question of private nursing. In a measure, Mr. Bradley will have a new viewpoint, and he should bring something fresh and new to bear on the nursing problem. Perhaps, after all, that problem is not so difficult of settlement as we make it out

to be, and that someone not quite so closely confined within the walls of the hospital has the key to the solution.

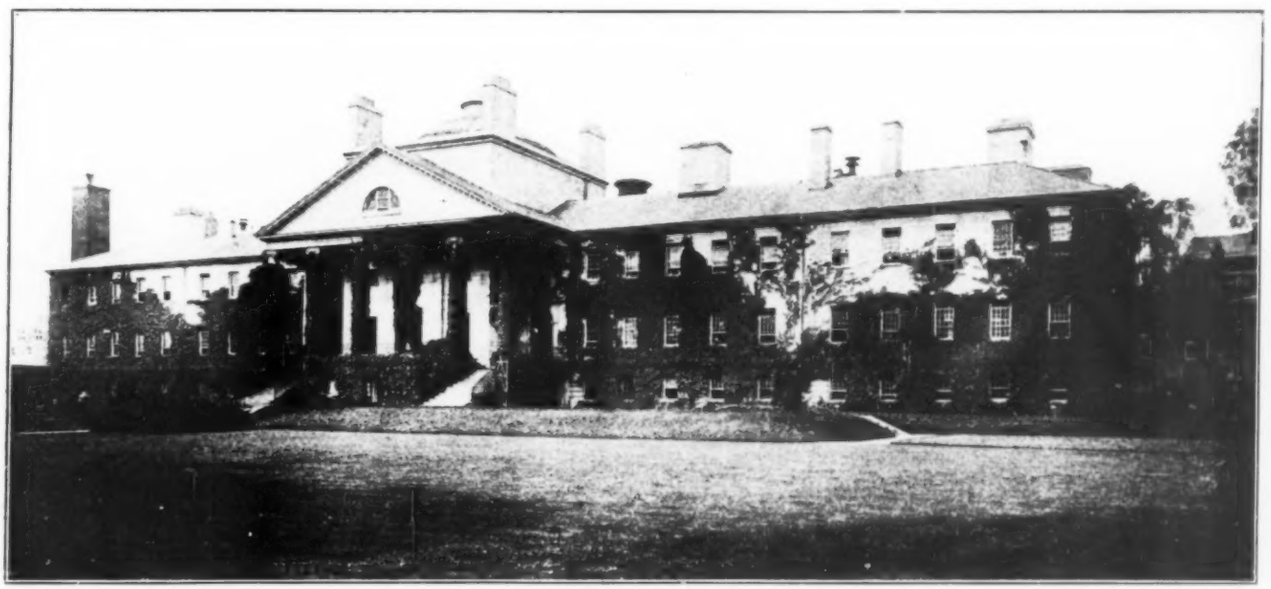
"The Grading of Nurses," by Miss Riddle, and the report on the grading and classification of nurses, form the balance of a symposium that ought to be most valuable. There are two viewpoints on this phase of nursing. One is, that there is a trained nurse, who is the product of the modern training school, and that she is the only one who can use the title or command the respect and remuneration due to a trained nurse, and that all others in the nursing field are "attendants." The other view is that there may well be three grades of nurses, the first to include highly educated women, who are qualified to take a rather intensive training, with a view to going into institution work as teachers and demonstrators; a second class, made up of young women of not quite so good a preliminary training and not quite so exhaustive a hospital training course—these women to do private nursing and special nursing in the hospitals; and a third grade, whose practice would be closely related to the practical nurses that seem now almost disappearing, and whose chief office would be to go into the home—the home of very moderate means—and help the mother, and do simple and plain nursing for patients not very sick, or at least not suffering from one of the obscure or exacting diseases. It is understood that the committee's report on this subject will lean toward the latter view.

Wednesday's session is divided into two parts. The smaller section, embracing the larger hospitals, is to meet in the amphitheater of the out-patient department of the Massachusetts General Hospital. There will be three papers read in that meeting; the first by Dr. Hornsby, of Chicago, on "The Inspection and Standardization of Hospitals;" the second by Dr. Hollings on "Record Keeping at the Massachusetts General," and the third by Dr. Peters, of Providence, on "New Hospital Construction."

Dr. Hornsby's paper will undoubtedly deal with work that has already been done and work that is to be done in connection with a propaganda for some sort of standardization of hospitals. It was partly with a view to accomplishing this purpose that Dr. Hornsby favored the creation of a hospital section in the American Medical Association. In pursuance of the program he asked for and obtained a committee at the Atlantic City meeting to consider what might be properly done along these lines. At Minneapolis Dr. Hurd, chairman of the committee appointed at Atlantic City, reported progress and asked that the committee be continued for another year, which was done.

Dr. Hornsby, in his paper, will undoubtedly tell us just what is to be attempted, and why.

Dr. Hollings' paper should be most interesting. In the editorial part of THE MODERN HOSPITAL will be found an editorial by Dr. Hoffman, actuary of the Prudential Insurance Company, on hospital statistics and their value as a basis for reckoning hospital efficiency. If Johns Hopkins, as Mr. Hoffman says, is in the lead in its records and in its vital statistics, there are many who have felt that the Massachusetts General Hospital is a serious contender for the honors, and we have all come to look upon the records of the Massachusetts General Hospital as something well worth striving to emulate, and we will undoubtedly learn very much from Dr. Hollings' presentation of the whys and wherefores of the system.



MASSACHUSETTS GENERAL HOSPITAL—BULFINCH FRONT.

Dr. Peters has a way of tearing away the veils and the mists from any subject he discusses, and his paper should be an illuminating one on the subject of "New Hospital Construction." There are so many new hospital architects these days, and so many architects who do not claim special knowledge in regard to hospital building, and there are so many fads and fancies being presented to boards of trustees and hospital superintendents, that it will be well worth while to pause at the Boston meeting for a summary and an inventory of where we are actually "at" in hospital construction. No one can make such a summary better than Dr. Peters.

A most excellent program is billed for Wednesday's session of the small hospital section. Mr. Olson's paper on "How the Small Hospital May Be Made Self-Supporting" comes first. This is one of the fundamental problems for the small hospital at the present time, and no one can treat that problem better than Mr. Olson, because for four years past he has been wrestling with it. Going

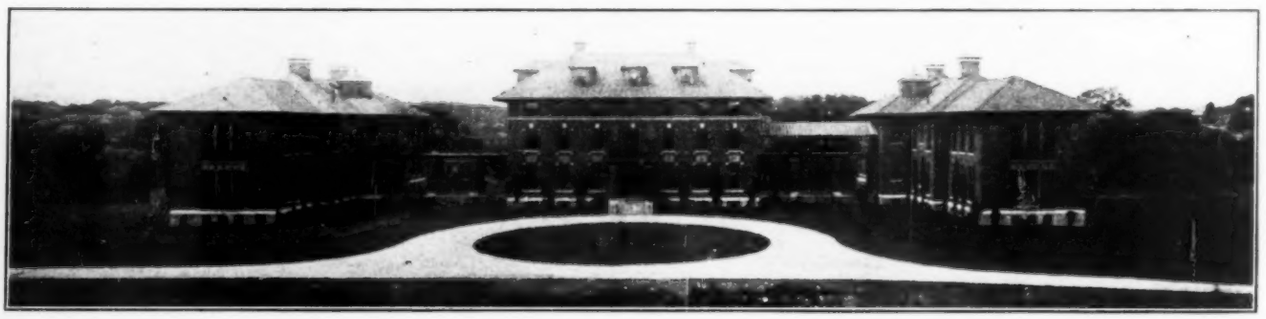
into a very small hospital four years ago, paying rent for the building over his head, he now comes out at the end of four years with a really fine institution, which no longer pays rent, but owns its own property and is independent and self-supporting. This paper ought to be one of the best on the whole program.

Ambulance service is a knotty problem in any institution, and is doubly hard for the small hospital, whose patronage is small and whose obligations are great. Miss Moore's exposition of this subject should be illuminating to the small hospital administrators. Shall they own an ambulance, and can it be made to support itself, and, if so, how? Or shall they have their ambulance service done by a commercial concern, such as the livery garage around the corner or the livery stable in the next block?

In the afternoon session Miss Baker's paper on "The Employment of Third-Year Pupil Nurses as 'Specials'" should arouse an excellent discussion. The leaders in many training schools in the country are seriously objecting to pupil nurses being allowed to serve as hospital specials. Miss Nutting and the Teachers' College of Columbia University take this view of it. On the other hand, a great many nurses out in the broad nursing field in this country feel that a nurse cannot be well trained unless she has special nursing to do for private patients during her course of training. The Illinois Training School of the Cook County Hospital turns out some of the best nurses in this country, and yet the heads of the training school and the doctors of the hospital, and the nurses themselves, feel that the absence of "special" work in the nursing of pay patients in the hospital handicaps them immeasurably when they go out into private practice.

On Thursday morning the sections come together again, and after the business meeting the first paper is by Mr. Davis on "Out-Patient Work." Mr. Davis is perhaps the most largely experienced dispensary man in this country, and it may be hoped that he will take up, in an advisory way at least, the problems incident to the conduct of a dispensary in connection with the average hospital. There are many reasons why every hospital should have its own out-patient department. Perhaps there are reasons against this also. It would be an excellent thing if Mr. Davis would enlighten us on these questions. Mr. Goldstein will undoubtedly take the social side of the dispensary from the viewpoint of the church, a subject that has not been quite so fully discussed among hospital people and one that is well worth discussing. The last paper of the morning, that by Dr. Herbert J. Hall, of Marblehead, Mass., is on a subject that will probably occupy the attention of hospital and institution people generally more than any other for the next few years. The question of whether the "rest cure" is the thing to encourage with hospital patients, or whether they will do better by a well-modulated exercise, or at least occupation, is a vital one, and many splendid sociologists and administrators are insisting on occupational treatment for many classes of invalids. Dr. Hall has gone a step further, and is finding work and a niche in the world for people who have been despoiled of their ability to compete against their fellows either by sickness or injury, and Dr. Hall thinks that a great percentage of these people can be shown new lines of service, where they can earn their way and be self-respecting. Dr. Hall's work in this field has given him a most enviable position in the medical profession as well as in social and sociologic service.

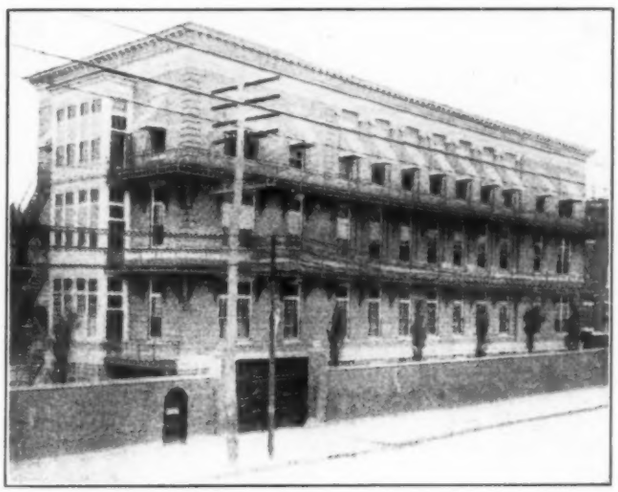
We have heard a great deal of the British Insurance Act and the Workmen's Compensation Law. The enactment of these laws has established an epoch in Great Britain, and they serve to burn the bridges between the past and the future. If Lloyd-George's plans that have been focused on these laws are correct, then Great Britain is entering upon a new era, with just what result remains for the near future to determine. The enactment of the laws was a highly hazardous thing. Great Britain's splendid hospitals have been supported by voluntary contributions, except in a few cases where the institutions themselves have carried fine endowments gathered in the course of many decades. The people of Great Britain say now that, if provision is made in these laws by which employers and insurance companies are compelled to take care of patients in the hospitals, then it is no longer necessary for them to continue their voluntary contributions. It has been freely predicted that many hospitals of Great Britain would go out of business as a result of these laws. None have died up to date. The papers by Dr. Mackintosh, of Glasgow, than whom none is better posted on these subjects, and by Dr. Edsall, of Harvard, should contain very much of extreme value to the people of this country because we are coming very close to a time when these same problems must be solved here, and all the sooner because of very recently enacted laws in some states, very much after the pattern of those we have been discussing.



MASSACHUSETTS HOMEOPATHIC HOSPITAL, ERECTED 1908—DEPARTMENT OF CONTAGIOUS DISEASES. CAPACITY, 150 BEDS.

Friday morning's session is taken up by papers from Dr. Mann and Dr. Young, the one on "Hospital Finances" and the other on "The Private Patient's Relation to the General Service," two subjects which overlap each other and are very intimately connected because there are a great many hospitals in this country today whose finances depend on the private patient, and in which the private patient bears a very pronounced relation to the general service—that is, the service of all classes in the hospital. Moreover, a hospital that has only public ward patients will be a vastly different thing, in so far as its cost ac-

counting and its finances are concerned, from the hospital in which there are private patients to be considered, because there is no doubt that the presence of private patients increases the consideration toward the free patients.



BOSTON CITY HOSPITAL—PAVILION III, WARDS K, L AND M.

### Interesting Sights of Boston.

No doubt Boston is the most interesting city in the United States. To many of us the coming convention will be looked forward to with an immense amount of pleasure—some of us because of the renewal of old friendships, and the enjoyment again of scenes which we may have been over, but which are inextricably connected with the history of our country; some of us have never been there before, and the landmarks of the struggles of our ancestors, known to us only in song and story, give a bewitching interest to the city.

### The Hospitals of Boston.

To us hospital people the hospitals of Boston will appeal especially, and there are some things about them that differentiate them from the hospitals elsewhere in this country.

In the Massachusetts General Hospital we have a private institution so splendidly supported that it can afford to treat free patients just as it treats its private patients.

In the Boston City Hospital we have a public hospital supported by public taxes, and yet an institution the peer of any in this country in architecture, in equipment, and in administration. The people of Boston take a justifiable pride in their city hospital, and it seems to have all the money needed for a splendid administration, largely for the reason, no doubt, that, unlike any other municipal hospital in this country, it is wholly dissociated from politics.

In the Peter Bent Brigham Hospital we have the apotheosis of the modern general hospital. With abundant money in the hands of some of the best hospital workers of the day, an attempt was made in this institution to build an ideal hospital. It will be a great pleasure to us who have not seen it before to know just how Dr. Howard has solved some of the problems with which we are all vexed at one time or another.

**The Massachusetts General Hospital.**—This is the third oldest hospital in the United States, those older being the Pennsylvania Hospital, of Philadelphia, and the New York Hospital. The Massachusetts General was incorporated in 1811, but it was ten years later before it was opened for the reception of patients. There are three departments of the hospital—the General Hospital, in Boston; the McLean Hospital, of Waverly, for the care of mental and nervous cases; and the Convalescent Hospital, also in Waverly. There are many interesting things about the Massachusetts General Hospital besides the exceptionally high character of its administration and its services. It is the institution in which ether was used for the first time as a surgical anesthetic on October 16, 1846, and it is understood that the old operating room in which this first operation was performed will be open to the view of members of the association. The record-keeping system of the Massachusetts General is very worthy of a close study by those who are interested in correct records, and every member of the association should by all means learn something about the out-patient service of this institution. There were 136,000 visits made to the out-patient department during 1912. Another extremely interesting feature is the Zander room for mechanotherapy. Physical therapy of all sorts is coming into general use in the hospitals of the country, and the hospital administered by any one of us may be interested in that problem in the very near future, and we should be thoroughly posted about what is being done elsewhere.

**The Peter Bent Brigham Hospital.**—The Peter Bent Brigham Hospital is hardly completed. It is intended to have 200 beds, and will cost more money than Dr. Howard would be willing to admit, but it is said to be the last word in modern hospital construction. Naturally every member of the association will be intensely interested in its many features, the chief of which perhaps, to the mind of the average hospital superintendent, is the arrangement of the ward and its auxiliaries, which is treated more at length and illustrated in another part of this number.

MASSACHUSETTS HOMEOPATHIC HOSPITAL—CLINICAL RESEARCH AND PREVENTIVE MEDICINE.

**The Boston City Hospital.**—The Boston City Hospital looms up large on the hospital horizon of this country because, as was said in the introduction, it is the one

public hospital not in politics. There are five distinct branches of the City Hospital—the hospital proper, the south department, the Haymarket Square Relief Station, the East Boston Relief Station, and the Convalescent Home. There are 1,061 beds in the hospital. The most interesting feature of this very interesting institution is its superintendent and its personnel, and the interesting thing about all the people is the immense personal pride they take in their hospital, as going to show that the institution stands for an extraordinarily high order of service and that everyone connected with it feels that he and she will remain there as long as they give a proper service to the patients and to the city. The photograph on another page, taken during the review of the ambulance service of Boston by the American Hospital Association, in September, 1905, will be of interest to those who were present at that time.

**Massachusetts Homeopathic Hospital.**—The Massachusetts Homeopathic Hospital is also a fine institution of 400 beds. Its special feature is the new infectious disease hospital, the architecture and administration of which will more than repay careful study and an extended visit because it represents a class of architecture that is very much in the public mind just at present.

**Children's Hospital.**—The new Children's Hospital connected with the Peter Bent Brigham and with Harvard Medical School, and containing 100 beds, is another expression of the newest features in children's hospital construction. It is not yet finished, but will be well worth a visit. A short account of it appears elsewhere in this number.

**Boston Floating Hospital.**—The Boston Floating Hospital, with 120 permanent beds and an additional accommodation for 120 day patients, should also be visited. It shows what can be done in the harbor of a great city for the children of the poor.

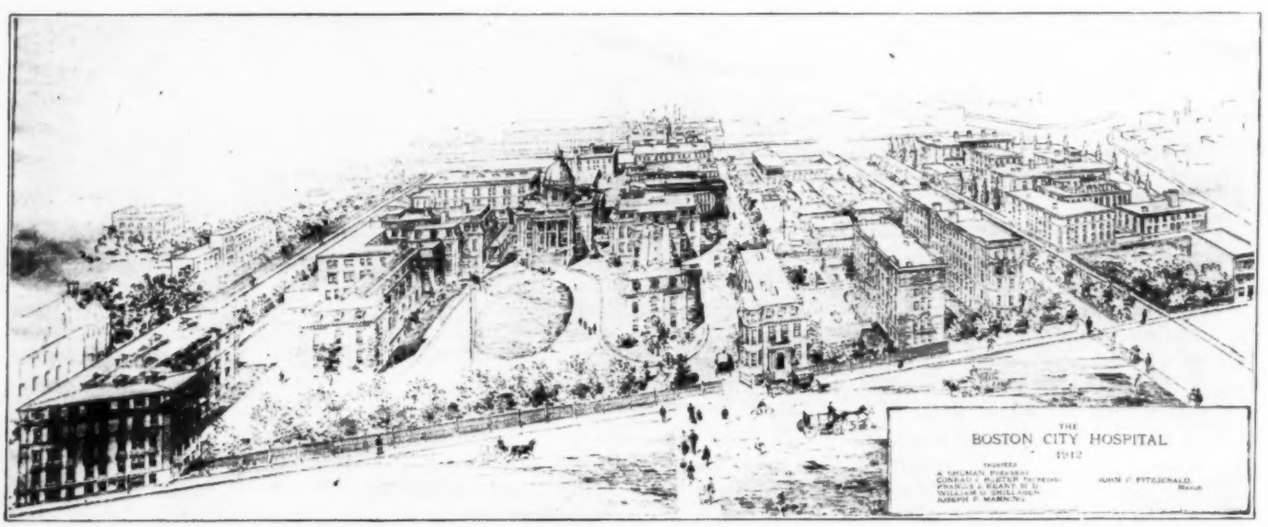
**Devereux Mansions.**—Devereux Mansions, at Marblehead, is one of the most talked of institutions in the country today, because Dr. Hall, the executive head of it, is conducting there workshops for handicapped and helpless people. People who have been maimed or crippled, or rendered unfit for the world's competition, are being taught industries that will give them a living, and that will replace them into society.

**Boston Dispensary.**—Mr. Michael Davis' administration has placed the Boston dispensary at the head of institutions of its class in this country, and those who are interested in out-patient work, social service, and dispensary work generally must by all means visit Mr. Davis and his interesting institution.

**Newton Hospital.**—The Newton Hospital, under the direction of Miss Mary Riddle, shows what a 200-bed hospital can do under the administration of a capable and competent woman. It has surgical, obstetrical, and contagious departments.

**Boston State Hospital.**—The Boston State Hospital, with its 1,200 beds for the insane, is especially noted for the new psychopathic department at 74 Fenwood Road. This is one of two institutions in this country that represent practically a new field of medical science, or at least they stand for new methods of treatment of a large percentage of the mentally unbalanced, the Phipps Institute of Johns Hopkins Hospital being the only other institution of this kind. Dr. Southard's administration and the application of his method of treating these classes of cases has drawn wide attention to Boston in the last year or two. Those who have anything to do with the care of disturbed patients, and patients who have needed restraint under older methods, should certainly visit the Fenwood Road Hospital, because they have done away with restraint there even in violent cases, and are employing instead hydrotherapy and physical therapy of various sorts.

There are many other splendid hospitals in Boston, some special in character, like the Robert B. Brigham Hospital for Incurables; the Vincent Memorial Hospital for Women and Girls; the State Infirmary at Tewksbury, with its 300 beds for consumptives and 700 for insane; the New England Hospital for Women and Children; the new and as yet unfinished Massachusetts Hospital School, intended to have 240 beds; the Massachusetts Charitable Eye and Ear Infirmary, to which so many students and would-be specialists in diseases of the eye and ear come for postgraduate work; the Holy Ghost Hospital in Cambridge, with its 110 beds for tuberculosis, cancer, paralysis, and other incurable diseases; the House of the Good Samaritan, for practically the same classes of cases; the Huntington Memorial Hospital, whose chief purpose is to afford opportunity to medical men for the investigation of malignant tumors; and there are many other institutions with interesting history and interesting special features.




BOSTON CITY HOSPITAL—BIRD'S-EYE VIEW.

# FOREIGN CORRESPONDENCE

## LONDON LETTER.

**Oxford Meeting of Hospital Superintendents—Tuberculosis In General Hospitals—Private Rooms for Pay Patients—Osler's Advice.**

London, July 30, 1913.

Last month was rendered notable for the hospital world by reason of the holding, at Oxford, of the fourth annual conference of the British Hospitals Association. About a hundred representatives, both lay and medical, gathered at the historic seat of learning on June 19th and 20th, under the very appropriate presidency of Sir William Osler, as all the world knows, regius professor of medicine in the University. After the formal, but none the less sincere, exchange of such complimentary salutations as are usual on these occasions (in this case between the vice-chancellor of the University and the mayor of the city on the one hand and the representatives of the association on the other), Sir William delivered his address, which was not only listened to with the extremest interest, but has attracted considerable attention in the general press.

Candor compels an Englishman to say that Sir William, after reviewing his experiences at home in America and elsewhere, roundly condemned the many of our provincial general hospitals as being, in certain respects, hopelessly behind the times. In thus laying about him lustily, Sir William Osler had in mind not so much the merit of the medical and surgical skill provided as the adequacy of the arrangements made for the prosecution of bacteriological and pathological research. He insisted (and no one can say him nay) that it is on chemical and bacteriological research that modern medical science is built up, and that proper treatment cannot now be given to patients unless proper attention is paid to this side of hospital work. Proceeding, the president raised what he spoke of as another delicate question in suggesting that in small hospitals, with only a comparatively few beds, the right thing would be to have only one or two doctors on the visiting staff, and for them to be restricted to consulting work, whilst being paid such a salary as would enable them to devote more time to the care of patients and to investigation.

Sir William Osler's most caustic comments were, however, reserved for our obstinate adherence to what is known as the "voluntary system." In England, with the exception of those places in which persons who are paupers and none other are treated, and those institutions in which persons who are insane or suffering from infectious diseases are maintained, hospitals are supported entirely by the subscriptions and bequests of the charitably disposed. Since the services of the visiting medical staff are, as a matter of course, under these circumstances purely gratuitous, it has come about that, with but a few very inconspicuous exceptions, the London and provincial hospitals do not admit into their wards, save in emergency, any but those who cannot pay medical fees. A consequence is that, as has often been pointed out, and as Sir William drove home with forcible phraseology, while everything is done for the poor, nothing is done for the rich. And an Irishman would say that even less is done for those who are neither poor nor rich than for those who are either one or t'other. He said, in words that are destined to be cited repeatedly: "If John Hodge has acute appendicitis, he is taken into a beautiful hospital and operated upon in a splendid operating room, with all modern advantages. He is put into a big, airy ward, and spends his convalescence on a balcony surrounded by all the advantages the hospital administration could give. What happens to 'Lady Clare Vere de Vere?' When she has acute appendicitis she is taken to a stuffy house, which has been transformed into a nursing home, and operated upon in a back room, transformed into an operating theater. No wonder she hates doctors, nurses, and the medical profession. Such experiences have alienated very largely the upper classes from the profession of science and medicine. Many nursing homes are admirable and up-to-date, but many are not; in fact, not one can take care of a patient as well as the general hospital."

Herein Sir William, acutely enough, put his finger on a curious want in our English life that has often been felt, but seldom better expressed; and one is reminded of the excellent story (which, I believe, has been ascribed to the "eminent raconteur, Ben Trovato") that when many years ago King Edward VII., then prince of Wales, was at death's door from typhoid fever, his royal mother asked Dr. William Gull, as he then was, if he were satisfied with the nursing. "Madam," replied Gull, "his Royal Highness is as well treated as if he were in my wards at Guy's."

The real truth is that, although a paying hospital, to which I will refer presently, is about to be opened in London, much in the way of providing hospital treatment for the middle and upper classes cannot well be arranged until the "voluntary" hospital system is abandoned; until medical services in the hospitals are remunerated either by fee or by salary and hospitals themselves are maintained either by the rates or by the payments of persons admitted and treated. It has always seemed to me, as one who has had experience of "isolation hospitals," to which ratepayers and their dependents are admitted free, that payment made through the medium of the local rate collector merely represents an insurance premium for hospital treatment in the event of an infectious fever being contracted. So, if our voluntary general hospitals are to be "municipalized," the contributions of the ratepayers should entitle them to certain benefits without additional payment. But Sir William Osler urges that our general hospitals must take pay, telling us again that there is no "general hospital in Canada or the United States that does not take all the money it can get from all classes of patients."

That the voluntary system should go, not everyone, however, agrees; that it will go, on the other hand, few care to deny. The fact is that the insurance act, of which probably you have heard more than enough, has completely revolutionized the conditions of medical practice, and it is inevitable, as Sir William clearly sees, that the general hospitals will have to be linked up with other parts of the machinery for caring for the health of the units of which society is composed, and that in this process

of linking up there will be a very considerable readjustment of affairs.

The hospitals must be, from one point of view, a place to which the state panel doctor can go for aid; from another, it must be a place in which the middle classes, and the wealthy ones, too, can secure at least such advantages as those now offered without stint to the least deserving of the community. Indeed, discussion of the effects of the insurance act was an inevitable part of the proceedings of the conference, and the paper read by Dr. D. J. Macintosh, of Glasgow, who, while hesitating to admit that the voluntary system has broken down, agreed that we have to consider seriously that our position is an important one. With respect to certain legal questions raised—as to the possible recovery, under certain circumstances, by hospitals of sick benefit from insured persons—Dr. Macintosh advocated a year's delay for reflection before initiating united action.

Sir Henry Burdett, as did other speakers, agreed with the acceptance of the principle that paying patients should be admitted to our general hospitals, and he suggested that the government should lend money to hospitals in order that additional pavilions might be erected for the reception of insured persons, insisting that the absence in the act of any provision for hospital treatment for insured persons was the great blot on the government's scheme. On the other hand, Mr. Cooke, of Chester, and Mr. Alvey, of the Charing Cross Hospital, London, thought Sir Henry's fears exaggerated, and his proposals for state loans unsatisfactory. Sir Thomas Oliver, of Newcastle, though unable to be present in person, sent a valuable essay, which was read by Mr. Cronshaw, dealing with the subject of "Tuberculosis and the General Hospital." He sought to show that, given good conditions and plenty of ventilation, the infectiousness of tubercle in the wards of a general hospital is slight. He dealt with a series of experiments he had made last year to test the infectivity of the expired air and of the sputum of phthisical patients, and stated that he got three phthisical patients to read aloud for ten minutes and cough into specially prepared agar-glycerine films, from which cultures were made and emulsions injected into the bodies of guinea pigs. Although all three were pronounced tuberculous subjects, yet from only one of them did tuberculosis in the animals follow. He proceeded to discuss the vexed question, "Ought tuberculous patients to be admitted into a general hospital?" and prefaced a lengthy argument by the curt statement of fact that they are in the wards of every general hospital, and "you cannot, in fact, keep them out." Sir Thomas gave instances of the many cases sent into general hospitals suffering from all sorts of complaints or as the result of accidents, yet becoming tuberculous. He quoted the case of a mason's laborer who fell from a scaffolding and sustained injuries to the wall of his chest. He was admitted to a hospital suffering from fractured ribs. Pleurisy developed and this was subsequently found to be tuberculous. This and many other instances were given to show that, although the authorities might by regulation exclude the tuberculous cases, yet in practice they were bound to admit them. In the general hospitals of Paris, which are state owned, two-thirds of the clientele were cases of tuberculosis. In conclusion he gave it as his opinion that the national insurance act would not affect general hospitals, as the panel service would be useless to cope with severe and protracted illnesses or surgical diseases, for the panel doctors had neither the time, means, nor surgical training and experience to enable them to deal with such maladies.

Dr. Duncan, physician to two large sanatoriums in Scotland, agreed with Sir Thomas Oliver in the utter impossibility of keeping tuberculous cases out of general hospitals, but urged the provision of separate accommodation. Hospitals should claim the cost of treating all such cases from the insurance commissioners, whether they are cases of tuberculosis of the lung or operative cases, and whether they are insured persons or not.

Mr. J. C. Buchanan, representing the Metropolitan Hospital, spoke of the arrangements made by his board for acting in conjunction with the public health authorities in the diagnosis and treatment of this disease.

One of the delegates mentioned that at Liverpool the insurance commissioners or corporation were paying the general hospitals 27s. 6d. per week for each case sent in, whether for operation or otherwise, and it did not matter whether the patients were insured persons or not.

Sir William Osler, in discussing the paper, advocated tuberculosis dispensaries in connection with general hospitals, and declared that the shocking condition of things revealed by the social service work at St. Thomas' Hospital indicated that the work of prevention would never progress until the conditions under which patients lived were improved.

The Rev. G. B. Cronshaw, replying to the various speakers on behalf of the author of the paper, outlined the attitude of the Radcliffe Infirmary in their cooperation with the local authorities and the insurance commissioners to fight this fell disease. Six beds had been placed at the disposal of the authorities; not that they had beds to spare, for they had not. On the contrary, every available bed was taken, and over 40 cases were waiting admission. Still, they had allocated six beds to the use of the city for this purpose. Also, the staff had agreed to place the outpatient department at the disposal of the tuberculosis officer at certain times, together with the use of all the apparatus. The city authorities agreed to pay 30s. per week for each of the six beds, and to work them for a year in advance, and this sum would also be supplemented by a donation to the funds. These beds would be filled at the instance of the city authorities, but the cases would be treated by the honorary medical staff, and would remain entirely under the hospital's control. Mr. Cronshaw concluded an impassioned appeal to the managers and doctors of the general hospitals to cooperate with the authorities to stamp out this disease with the words: "If as hospitals we do not help in this work, we are betraying the most sacred trust that has been imposed upon us. If we cooperate, it will not hurt the medical staff, and it will not hurt the board; but it will confer incalculable benefits upon a suffering humanity."

The building of the hospital of the future was the principal subject of discussion on the second day of the conference.

In a paper on the "Upkeep of Hospitals," Mr. Keith Young demonstrated how the cost of upkeep was seriously affected by such errors of construction as excessive length of corridors, which increased the cost of cleaning. St. Thomas' Hospital, London, was pointed out as an instance of what a hospital should not be, on account of the narrowness of the site, which necessitated ground-floor corridors covering over one-third of an acre.

Mr. Conrad commented on one of the latest and largest London hospitals in which the architect had incorporated a number of undesirable points. At St. Bartholomew's casualty cases had to be jolted upstairs in the ambulance instead of being wheeled smoothly up slopes. Sir Henry Burdett said that in his judgment the building plan of St.

Bartholomew's was wrong, and they could not find an architect to carry out in detail a modern hospital without getting such mistakes. Mr. W. Carul pointed out that a serious problem was that of the perfect floor, which yet had to be discovered.

Among those who debated the questions of an engineering, architectural, or building character were Mr. W. H. Walrond, consulting engineer to St. George's Hospital; Mr. W. G. Carnt, secretary Manchester Royal Infirmary; Mr. Arthur Griffiths, secretary East Suffolk Hospital; and Mr. J. Neil, General Hospital, Wolverhampton.

Sir William Osler, in winding up the discussion, said that he found in the Peter Bent Brigham Hospital in Boston the realization of a new ideal, both for the simplicity with which it had been built and for its management.

Afterward Mr. Conrad W. Thies spoke of the special qualifications now imperative to the secretary of the modern hospital, not the least of which, he said, was an intimate practical acquaintance with such matters as gas, electricity, drainage, and general building repairs.

It will be gathered from this necessarily very condensed report of the proceedings that the business side of the conference was not neglected, as sometimes is the case at such gatherings. And it will also be gathered that a feeling of considerable anxiety and unrest obtains at the present time among those responsible for the management of hospitals generally. Yet the forthcoming year will doubtless contribute, by the simple passage of time, to the solution of many problems that now press vexatiously. It is our national custom to "muddle through," and, as the late Lord Goschen once said, our motto very often is, "Solvitur ambulando," which we freely translate, "Let us settle things as we toddle along."

At the same time it cannot be denied that Sir William Osler's gift of direct and arresting speech has certainly focused popular attention, and shaken the complacency of many whom I believe you would consider to be "back numbers." In particular, the publicity given to his remarks has stimulated the fruition of a scheme, set on foot a year or two ago, for the organization and erection in London of a paying hospital—as a business proposition, it is true, but also designed to fulfill a very definite purpose of imperial interest. The countess of Scarborough, who is taking a keen interest in this scheme, recently addressed to the principal papers a forcible letter, from which I venture to make such extract as will perhaps serve to explain the position of affairs at the present moment. Lady Scarborough wrote in these terms:

"In his presidential address to the British Hospitals Association at Oxford last week Sir William Osler contrasted the methods of Canadian and American hospitals with those of British hospitals, and drew attention to the fact that, while in the latter everything was done for the poor, nothing whatever was done for people of average means.

"This want in our hospital system is being increasingly felt, and has for some time been fully realized by members of the medical profession.

"A very large class of persons in this country and visitors from our oversea dominions, if they cannot be treated medically or surgically in their own homes, are forced to have recourse to private nursing homes, which, as Sir William Osler points out, are only too frequently ill adapted for the purpose, and can in no case afford the same benefits as are provided in an up-to-date hospital.

"I think it will be of public interest to state that an effort is now being made to remedy this state of things.

"The 'Empire Hospital for Paying Patients' is in course of erection in Vincent Square, S.W.—a sunny open space, specially chosen on account of its freedom from the noise and dust of passing traffic—and will be opened this autumn.

"There patients will find the last word in hospital construction and equipment, where they can be attended by their own doctor or by any specialist, and can have a large or small room, or a suite, according to their means.

While a movement of this kind must be conducted on strictly business lines, it does not aim at large profits, the main object being to provide at a very reasonable cost everything that is found to be conducive to the successful treatment and comfort of the sick.

"Should this pioneer effort prove the success that is anticipated, it is intended to establish similar institutions in the populous centers throughout the country."

To this statement of aims there is little or nothing to be added, but I hope to be able, in the course of a few weeks, to furnish some details pertaining to the construction and administration of the new institution. I have not the least doubt that when the hospital is in working order no American cousins of ours will fail to obtain the greatest consideration should they desire, in time of sickness, to avail themselves of its privileges.

F. G. Crookshank, M. D.
Physician to the North-West London and Hempstead General Hospital.

## BERLIN LETTER.

### First of a Series of Letters Descriptive of Special Features of the Hospitals of Germany.

Berlin, August 1, 1913.

For most cities the hospitals are a mere incident, a sort of necessary evil attendant on municipal growth, like the moving picture show and the taxicab. One may travel through the cities of Spain without being aware that such a thing as a hospital exists, or, if a hospital is found, we are probably told that, like the lace of Valencia or the leather of Cordova, it was made in France. In Italy also, or even in France, while good hospitals exist, they are not thrust upon you; they are usually modestly secreted beneath the shade of some great cathedral, and bear somewhat the same relation to the church as does the gentle violet to the massive oak. But in Berlin all this is different. Berlin is only a *vorstadt* for a great group of hospitals. They are the main thing; the city itself is only secondary. The American tourist spends a winter in Rome and three days in Berlin. The American doctor spends a winter in Berlin, and, if you ask him about Rome, he will tell you it's a village somewhere in New York state.

Berlin is now one of the great cities of the world, and, with its immediate suburbs, it holds over 3,500,000 people. Every year 1,500,000 strangers visit Berlin. The city has an estate of 330,000,000 marks and spends 37,000,000 marks a year on its schools—more than twice as much as does the whole country of Spain. But, to repeat, these are mere details and simply serve as a fitting background to the city's hospitals, which are so great, and beautiful, and adequate that, if I described the newest, I would have to go around the whole world and back to Berlin before I could find its equal. Only here in Berlin, of all the cities and all the hospitals in the world, could I find such another. This statement may perhaps offer a chance for argument, but I speak in the broadest sense. There are other hospitals that house more patients, and there are other tiny jewels of hospitals. There is the great central hospital group at Vienna, but it is as yet unfinished. Therefore, taking the hospital in its broadest sense—including with the beauty and generosity of the architecture the equipment, the organization, the quality of the men who treat the sick, and the opportunity for advancement

of scientific research—I repeat that here in Berlin we have not only one, but two, of the greatest of the world's hospitals.

Each one of the features detailed above must serve for a separate article in making a critical study of these German institutions. In this letter I must limit myself to the briefest physical description of some of Berlin's larger hospitals. An idea of their beauty and extent can best be conveyed by the pictures that accompany this article, but no picture can give an idea of the soft, cool green of the trees, and turf, and shrubs, of the luxuriant masses of flowers, of the fresh odor of the country and of spring, that one encounters on passing through the gates of one of these hospitals. All the hospital grounds are beautiful parks.

As we must begin somewhere, let us start with the Charité, which is at the same time both the oldest and newest hospital in Berlin. Only one of the little old plaster-covered buildings that comprised the original group now remains. In this place, which I find that I described only a few years ago as "an ununiform village, . . . with buildings so old that you fear lest your feet go through the planking as you walk the wards," now is a city beautiful within a beautiful city. Artistic gables, spires, and bits of slate-covered roof rise above the trees from red brick walls set with ornamental windows. Gray stone balconies hold the beds of convalescent patients, taking the fresh air in the shade of gayly striped awnings, while below on the green turf are the wicker cribs of the well-nourished infants of the *kinder klinik*, guarded by the well-starched nurses (I refer to the uniforms), who may give you a friendly smile as you pass by.

But I am wasting time in description when space demands that I should merely catalogue. To be statistical, then, we find that this hospital, which celebrated its two-hundredth birthday in May, 1910, is made up of a group of twenty-two new buildings and one old building. It has beds for 1,247 patients. Its medical clinics are in charge of Geh. Professor William His and Geh. Professor Friedrich Kraus, and has the following staff: Geh. Professor Hildebrand, chief of the surgical clinic; Geh. Professor Franz, chief of gynecology; Geh. Professor Czerney, chief of pediatrics; Geh. Professor Bonhoeffer, chief of neuro-psychiatric clinic. Geh. Professor Orth, the successor of Rudolph Virchow, is in charge of the department of pathology, or rather one should say the Pathological Institute. This institute comprises two large buildings, in one of which is the pathologic museum, where mementos of Virchow and many specimens labeled in his own handwriting are to be seen. The dimensions of this institute alone can be better understood by the statement that Orth has three great amphitheaters in which to do his teaching—one for demonstrations, one for autopsies, and one for mere lectures. There are two epidiascopes, and a remarkably effective arrangement of light to prevent direct reflection on demonstrated material. But here again I am getting away from my catalogue. I can only say that every department is equipped as adequately as human ingenuity can suggest and money procure for the care of the sick, for the teaching of medicine, and for the advancement of medical research.

Briefly, we might mention some of the other hospitals of Berlin. First, there is the Rudolph Virchow Krankenhaus, which has sixty-seven buildings and beds for 2,000 patients. To this I will devote an entire letter later on. Then there is the Krankenhaus Moabit, which was hastily erected in 1872 to meet the demands of the smallpox epidemic which followed the Franco-Prussian war. This hospital is built on the pavilion plan, and can accommodate 1,000 patients. Here are found men like Klemperer in medicine and Sonnenberg in surgery.

Out in the northeastern part of the city is the Krankenhaus am Friedrichshain, which also has a capacity of about 1,000 beds. This hospital is also made up, for the most part, of small pavilions, the floors of which are flush with the ground, so that such patients as are able may step or be wheeled out directly under the great trees. Professor Dr. Braun is chief surgeon here. The hospital is, however, best known to Americans from the fact that the chief of the pathological department is Professor Dr. Ludwig Pick, and no medical man ever comes to Berlin without taking a course with Pick, and does not go away without taking with him a permanent memory of one of the most enthusiastic, active, and effective teachers of medical science in all Europe.

Then there is the Urban Krankenhaus, with about 700 beds, situated in the south of Berlin. Here are Professor Dr. H. Fraenkel, in internal medicine, and Geh. Professor Koerte, chief of the surgical department.

We must include also among our city hospitals the new Charlottenberger Krankenhaus, completed in 1903, having 1,000 beds, and costing over 6,000,000 marks. This hospital can, however, easily serve for another special article. The Kaiser und Kaiserin Friedrich Kinder Krankenhaus is also a municipal institution. Geh. Professor Baginsky is chief of this hospital, and it was due to his efforts, aided by Virchow, that this hospital was founded in 1890 for children up to fourteen years of age.

So far, with the exception of the Charité, which is a state hospital as well as a city hospital, I have mentioned only the municipal hospitals of Berlin—merely the city hospitals, that compare with our one city hospital in St. Louis, for example. True, people may pay—and some do pay, while others do not pay—in these institutions, so that the comparison is not strictly correct, but that is a matter for later discussion. For a subsequent letter there must be left descriptions of the numerous university kliniks, although they are presided over by such men as Bier in surgery, Bumm in gynecology and obstetrics, etc., and so on. Then, finally, comes the whole flock of smaller hospitals, for a description of which there is no space in this letter. We are back at Karlsplatz, near the entrance to the great Charité, and above us towers the shocking *denkmal* to the memory of Rudolph Virchow. That in itself is an indication of the secondary importance of the city and the predominance of medical power in Berlin, for I am sure if the medical profession had not completely overawed the rest of the people of Berlin, they would never have tolerated that monument.

R. L. Thompson, M. D.
Professor of Pathology, St. Louis University School of Medicine.

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Recently there died in England a Colonel Sir Charles Stoddard, a wealthy iron manufacturer. In his will $40,000 were left for one of two purposes, the choice to be left to his executors. They might use the money for an almshouse, or—and this was the colonel's own choice—they might use it as a fund to rehabilitate patients recently in hospitals.

This is the dead Past bowing to the Present. It seems almost medieval to provide money to continue poverty when it would do so much more good if applied to a well-thought-out plan for the rehabilitation of those who are stranded by recent illness and misfortune, and many of them would, with a little help, become self-respecting, self-supporting members of society.

# CURRENT HOSPITAL LITERATURE

Eleventh Annual Report of the Holsterhäusen Sanatorium at Werden for 1912. F. Kohler. Centralbl. f. allg. Gsndhtspflg., Bonn, 1913, hft. 5-6, 183-201.

The author gives carefully prepared statistics and interesting treatment of 615 tuberculous patients.

The Kitchen for the Sick Poor of Turin (La cucina per malati poveri di Torino). F. Abba. Riv. di ingegner. san. Torino, 1913, June, IX, 157-160.

A description, with cuts and plans, of the new diet kitchen for the sick poor of Turin. In 1912 special diets for 16,618 patients were prepared. The kitchen is closed during the hot months of July to October, inclusive.

Structure and Arrangement of Hospitals at the International Architecture Exposition in Leipzig (Bau und Einrichtung von Krankenhäusern auf der internationalen Baufach-Ausstellung in Leipzig. D. Spiller. Ztschr. f. Krankenanst., Leipz., 1913, IX, 438-443.

The first installment of a paper describing the exhibits illustrating hospital construction at the Architecture Exposition in Leipzig. The paper is written by an eminent architect in a popular style, with plans and illustrations.

Habitations for the Tuberculous. Vincent Hooper. Brit. Jour. Tuberc., Lond., 1913, July, VII, 177-184.

An article dealing with the main principles which should guide the arrangement, planning, and construction of habitations for the tuberculous—sanatoriums, sanatorium hospitals, and residential sanatorium schools. A few sketch plans are given.

The Hospital and Chapel of Saint Mary Roncevall at Charing Cross. James Galloway. Proc. Roy. Med. Soc., Hist. of Med., Lond., 1913, June, VI, 191-232.

An interesting illustrated paper on the history of the ancient conventual hospital of St. Mary Roncevall, founded in the time of Henry III. and existing until the dissolution of the religious houses by Henry VIII. Its founder was William Marshall, Earl of Pembroke, son of William Marshall, "rector regis at regni" during the minority of Henry III.

The "Kaiserjubilaumsspital" of the City of Vienna (Das Kaiserjubilaumsspital der Stadt Wien). D. Linsmayer. Wien. klin. Wchnschr., 1913, XXVI, 801-817.

An interesting and adequate description of the great public hospital of Vienna, begun in 1870, and richly endowed on the occasion of the Emperor's Jubilee. The hospital has very nearly 1,000 beds, and is divided into eight clinical services—surgery, two for internal medicine (one of which is especially for tuberculosis); skin diseases and syphilis; diseases of the eye; gynecology; diseases of the ear, nose, and throat; genito-urinary diseases; besides, all the necessary adjuncts to a modern hospital—x-ray institute, a pavilion for physico-therapy, laboratories, etc. The article is illustrated with plans of the hospital and of each pavilion.

"Festschrift" on the occasion of the 100th anniversary of the foundation of the City Hospital of Munich. J. von Bauer. Vol. XV of Annalen der städtischen allgemeinen Krankenhäuser zu München, Munich, 1913, Lehmann, 722 pp.

A magnificent centennial volume by the director, assisted by the staff of the City Hospital on the left bank of the Isar, which was founded in 1813. 348 pages are taken up with a history of the hospitals of Munich from the middle ages, but more especially from the founding of this, the first general city hospital, in 1813. Statistical tables occupy 84 pages, and the volume closes with a series of interesting medical and surgical papers by members of the staff.

Sound Financial Administration of the Public Hospitals (Sanierung der öffentlich Heilanstalten). E. Hofmokl. Wien. klin. Wchnschr., 1913, XXVI, 1122-1124.

A plea for the government to handle and distribute the funds for the public hospitals of Austria instead of, as at present, leaving the financial administration to the various provinces of the empire. It is estimated for 1913 that 24,014,000 days' treatment in public hospitals is required for the people of Austria, of which 9,540,000 days represent the treatment in asylums for insane and mentally defective and 544,000 in maternity hospitals. These figures are compared with 17,000,000 days' treatment afforded ten years ago.

A Hospital in the Making; a History of the National Hospital for the Paralyzed and Epileptic. B. Burford Rawlings. Albany Memorial, 1859-1901, Lond., 1913, Pitman & Sons, 286 pp., 8vo.

The author has produced an attractive volume for general reading, giving the history of a noble charity founded in 1860 by Miss Johanna Chandler with scanty funds contributed by her family and solicited by them from the public. The sympathy of the lord mayor led to a meeting in the Mansion House, which was the birthplace of the new hospital for the care of paralytics, epileptics, and other patients affected with nervous diseases. The original idea of founding a home for helpless paralytics only was wisely abandoned and a hospital for active treatment decided upon. Brown-Sequard, Hughlings-Jackson, Bastian, Gowers, Sieveking, Ferrier, Victor Horsley, Felix Semon are among the great names associated with the growth of the hospital.

The Upkeep of Hospitals. Keith D. Young. Hospital, Lond., 1913, July 12, LIV, 451-453.

In a paper at the Oxford conference the author calls attention to the excessive cost of maintaining a hospital due to faulty planning. Two vital points are: (1) that the length of corridors should be reduced to an absolute minimum, and (2) that the routes to all departments to which patients have to be directed should be as simple and obvious as possible. Attention is called to the St. Thomas Hospital, built on a long, narrow site, where the ward pavilions are placed on one side of and at right angles to a corridor 930 feet long, the area of which on the ground floor alone is over a third of an acre. If it had been possible to arrange wards on both sides, the length of the passage might have been reduced one-half. The cost of cleaning, periodical painting, and whitewashing of corridors and of warming them in winter is an important point to be considered in planning the building. Simplified routes lessen the cost of distributing food and handling patients. Other details of construction affecting the cost of upkeep are discussed—plumbing, heating, and the structure of floors and walls.

Specialism in the General Hospital. Sir William Osler. Bull. Johns Hopkins Hosp., Balt., 1913, June, XXIV, 167-171.

The address at the opening of the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital has been already several times reprinted. It is an example of Osler's attractive way of saying things, and is full of delicate humor. The three principal functions—care of the sick, rich or poor, medical education, and original research—are emphasized, and it is recommended that even the private wards be thrown open to students "that the clinical clerks and surgical dressers might see the vagaries of sick life in all classes of society." In the palmy days of Rome the physician was followed to the houses of the wealthy by his pupils, a practice we could emulate in our private wards—limiting, of course, the numbers and selecting the cases. The address concludes with an appeal for harmony in the hospital units. "Isolation means organic inadequacy; each must be in sympathy and in union with the other and all for the benefit of the community; all toward what Bacon calls the lawful goal of the sciences—that human life be endowed with new discoveries and power."

Tuberculosis and the General Hospitals. Sir Thomas Oliver. Hospital, Lond., 1913, July 5, LIV, 413-415.

This paper, contributed to the fourth annual conference of the British Hospitals Association, which met at Oxford in June, discusses the question, "Ought tuberculous patients to be admitted to a general hospital?" the answer being both "No" and "Yes." They cannot always be kept out. Acute miliary tuberculosis attended with high fever and with difficulty differentiated from typhoid fever; pleurisies with effusion, of which many are tuberculous and others become so afterward; peritoneal effusions, which are generally tuberculous in young persons; infections of the urogenital tract in men and women; ulcerations of the intestine and enlarged glands in the abdomen—all these are types of cases in which the diagnosis is difficult and which must of necessity be admitted. The danger to others is negligible. Patients seized with sudden attacks of hemoptysis, with much shock and accompanied with great loss of blood, must be admitted from the humane point of view even when the diagnosis is clear. Tuberculosis is too subtle a malady, and its influences and ramifications are too widely spread, to bring it under the unqualified ban of prohibited admission to a general infirmary.

Open forms of tuberculosis, in which there is no difficulty of diagnosis, as advanced pulmonary phthisis and suppurating glands, present a different problem. The author does not know of instances in surgical wards of patients with suppurating glands having conveyed the disease to others, but it is not desirable that patients in advanced phthisis be admitted to the wards of a general hospital. This is as much from the point of view that the crowded ward is not the best place for the sufferer. Possibilities of infection cannot be ignored, as opportunities are numerous, and the other patients in the ward are in bad health and presumably more liable to infection than sound people.

During an experience of thirty-four years as a hospital physician, Sir Thomas can recall only two cases of possible tuberculous infection of one patient by another, but it may take months for a tuberculous infection to reveal itself, and we can seldom follow the after-history of patients leaving the hospital. The exclusion of all cases of tuberculosis, even if possible, would be a serious loss to the education of medical students.

The British Hospital System. Its efficiency and need for development. Sir William Osler. Hospital, Lond., 1913, July 5, LIV, 411-413.

In his presidential address at the Oxford conference, Osler speaks more particularly of the small county hospitals of England, which are usually well equipped, clean, and up to date in everything affecting the care of the patients. He emphasizes four points considered necessary for the proper development of the system:

(1) The voluntary system should be given up as antiquated and out of date, and the principle of taking pay from all classes of patients adopted. Under the national insurance laws pay must be taken from the insured, and there is no reason for not accepting it from all who can afford it. Everything is being done for the poor, but the "poor-rich" go to private nursing homes, none of which can take care of a patient as well as a well-equipped general hospital. A private pavilion for those able to pay well should be added to each general hospital.

(2) Admirable as are the county hospitals in regard to the care of the patients and the general arrangements, they are shockingly behind the times in laboratory facilities. Provision should be made at the earliest possible date for a good chemical, bacteriological, and pathological laboratory for each general hospital, and no county hospital should have to send to the research laboratories of London to have the diagnosis made as to whether a case is one of carcinoma.

(3) Instead of several local physicians, busy practitioners, doing the work of the small hospital, a single physician devoting his whole time to the work should be in charge of hospitals of fifty or sixty beds, and be paid a fixed stipend, so that he can devote a large part of his time to the care of his patients and medical investigation. In larger hospitals one pure physician might well have charge of the medical work instead of, as at present, three or four men in general practice.

(4) The county hospitals should be used for purposes of instruction for local medical men and students away from the universities on vacation. Once a year, or possibly twice, a post-graduate week might be arranged for, the teaching to be conducted by the hospital staff and invited specialists from throughout the country. This scheme is now before a British committee dealing with the question of post-graduate instruction, and may be presented shortly to the county hospitals.

The State Colony at Gardner, Mass., last year produced with handicapped labor 142,526 quarts of milk, worth $10,402.10; 2,202 dozen eggs, worth $704.64; a surplus of 178 head of stock, horses, cows, hogs, and sheep, besides nearly $40,000 worth of vegetables and fruit. In addition to all this, handicapped labor made and repaired all furniture, did all the painting there was to be done, made all the shoes, all the brooms, brushes, mats, pillows, window shades, all the clothing, did all the building and building repairs, made all the pickles and preserves—in fact, did all the work there was to be done about the farms. Dr. Charles T. La Boure, superintendent, is to be congratulated on a showing like this. And incidentally he seems to be showing the way to a solution of the great problem of what to do with deficients. He finds work that they can profitably do without having to meet the driving competition of skilled labor.

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### Boston Work for Children.

The Boston Consumptives' Hospital is just completing a new children's pavilion of 60 beds. Dr. Simon F. Cox, superintendent, writes most enthusiastically of the plans for new work: "The scope of the work on the child is practically without limit. It is the policy of this hospital to care for the advanced, dying child, the child who has definite lung signs, the child who has glandular tuberculosis, and the child with bone tuberculosis. In our work, prevention is the main end sought, and, applied to the child, means the consideration and care of a large class who are not definitely tuberculous, but have lived under tuberculous surroundings and are offspring of tuberculous parents. The classification of all school children is being approached scientifically by the Department of Child Hygiene of the Board of Health. The care and treatment of the child who is not definitely tuberculous is the problem now under consideration. The care and treatment of the child, together with its education, form a big medical problem. We are planning out the daily life of the child to be a series of practical applications of hygiene, and would be pleased to hear of the experience of others."

# NEWS *of the* HOSPITALS *and* SANATORIUMS

A nurses' home fully equipped and ready for occupancy has been presented to the Frederick (Pa.) City Hospital by Mrs. Georgiana Simmons, of that city.

Dr. Isaac Freemel has been appointed assistant superintendent of the Elgin State Hospital. Dr. Freemel has been physician at the Chicago State Hospital at Dunning.

The Evangelical churches in the United States are raising a fund to build a hospital in Tokio, Japan, to be conducted by their missionaries. The institution is to cost approximately $50,000.

Strenuous efforts are being made by the navy department to obtain recruits for the hospital corps. The men enlist for four years, and are detailed for training station service for special training before being sent to sea.

Miss Clara L. Davis has been appointed superintendent of the new Alice Hyde Memorial Hospital, of Malone, N. Y. Miss Davis was formerly superintendent of the Montreal General, the Cornwall General, and the Alexandria Hospital, of Montreal.

A bill to appropriate $100,000 for an institution for the care of "dope fiends" is under discussion in Wisconsin. Assemblyman Charles D. Rosa, of Beloit, is the introducer of the measure, which provides that the state shall build and support the institution.

Los Angeles is investigating its sanatoriums. Charges of various irregularities have been made, and the authorities are planning grand jury action. One arrest has been made, and a superintendent stands charged with forcible detention and cruel treatment.

The Pomona Valley Hospital, Pomona, Cal., has adopted a novel method of raising $50,000 with which to purchase its equipment. It is proposed to sell certificates for cash to churches, various societies, and individuals, the certificates to represent hospital service that may be used at any time.

The parish jail in New Orleans had recently thirteen insane persons "awaiting transportation" to the asylums. The authorities announced that an effort would be made to conclude some local temporary arrangement to relieve the crowded condition of the jail "for humane and sanitary reasons."

The plans of the trustees of the Washington University group of hospitals in St. Louis include a proposal to give hospital care to "self-respecting people of moderate means" for a "nominal" charge. The institutions have an endowment that will yield about $200,000 per annum, and deficits will be met out of this fund.

The business organization which is handling the Friedman tuberculosis turtle serum seems to be having a hard time establishing hospitals to treat patients. After being turned down by many institutions in several parts of the country, they decided to open their own hospitals. Colfax, Iowa, and Saranac Lake, N. Y., have refused to allow such hospitals to be opened.

Dr. H. A. Norden, who has been one of the leading physicians and citizens of Sturgeon Bay, Wis., for the past sixteen years, has been elected superintendent of the Chicago-Winfield Tuberculosis Sanatorium. Mrs. Norden will be matron of the institution. Winfield is just completing a $75,000 administration building and private pavilion, and will be able to accommodate about 150 incipient cases.

Stuart Circle Hospital, of Richmond, Va., was opened to the public last month. It is a private institution, intended solely for the care of the patients of seven physicians engaged in different specialties—two surgeons, two internists, one obstetrician, one eye specialist, and one ear, nose, and throat specialist. The hospital is six stories high, with operating rooms and kitchen on the top floor. There are rooms and small wards.

Minneapolis is discussing the provisions of a recently enacted law whose object was to place everybody employed by the city under civil service, including staff physicians of the municipal hospitals. The doctors are fighting their end of the proposition. They are relying on the point that they are not on salary, and hence are exempt from civil service. Legal opinion is now pending. St. Louis also has a row on about the method of choosing a city hospital staff.

Detroit is discussing the proposal to purchase Fort Wayne army post, just outside the city, and convert it into a municipal hospital and park. It is stated that the United States government intends to abandon the post and sell the property. The city now has $200,000, recently appropriated for hospital purposes, which might be applied toward the purchase of the army post. It is said the buildings will lend themselves to the new use with very inexpensive alterations.

Kansas' new State Hospital for the Insane, at Larned, is to take the form of several groups of farm colonies, to house different classes of patients. The first group, which is now under construction, will be the administrative group, the inmates of which are expected to help with the administrative work; the second group will be the farmers' group of cottages; the third, the industrial group; and the fourth is intended to house those who will require hospital care and will not be able to take any part in the colony activities.

Siam is a long way off, and one may well imagine that the work of administering a hospital so far out of the beaten track must tax all the resources of the most versatile superintendent. Dr. and Mrs. Paul Van Metre, of Atkins, Iowa, have just sailed from San Francisco, the former having accepted an appointment as superintendent of the Svart Memorial Hospital at Nakawn Sri Tamarat, a city on the extreme southern coast of Siam. The hospital is maintained by the Presbyterian Board of Foreign Missions and has 40 beds.

Following close on the heels of a national disturbance over the new insurance and employers' liability law, England now has a new agitation in favor of a national health department, with a seat in the cabinet of ministers. Strangely enough, the insurance companies are behind the plan, and their contention is that even now the public health is in the keeping of the already existing state insurance office, and that it only needs to clothe that body with the dignity and the recognition of a cabinet place to make the new order of things complete.

Detroit and Cleveland seem to be two cities whose hospitals are overcrowded to the point of actual distress. In Cleveland all the hospitals are urging relief from the overburden of free patients by the building of a municipal hospital, while in Detroit the situation seems sufficiently summed up in the headlines in a recent issue of one of the daily papers: "Hospital conditions get worse in Detroit, but nothing is done. Contagious diseases spread through wards. Demented, alcoholic and other dangerous patients must be kept with convalescents."

Abraham Slimmer, the aged Jewish philanthropist, of Dubuque, Iowa, is one of those few wealthy men who do good with their money for the pure love of their fellow man. Notoriety is extremely distasteful to him, and he has been known to give large sums on the one condition that his benefaction should not be known. The greatest joy of his life is to slip in on an institution that he has created and go about visiting the sick and poor. If he can steal in without being recognized, he is doubly happy. But woe to the institution that has not kept faith with him concerning the conditions under which his money was given!

The hospital of the Colorado Fuel and Iron Company at Pueblo has some novel things. Instead of the ordinary numbers on the room doors, the designation carries something of a description of the furnishings of the apartment, as, for instance, the Music room, the Japanese room, the Chinese room, the Spanish Mission room, and so on over a wide range of names. Dr. Walter Morritt, superintendent, is now planning to remodel his kitchen and cook entirely by electricity. The hospital is served with electricity from the company's general power plant, and it is believed that electricity under the circumstances will cost little, if any, more than coal; at any rate, the dirt and heat will no longer be present.

### The Hospital Section Transactions.

The secretary of the American Medical Association announces that, if a sufficient number of copies are ordered, he will be glad to have the transactions of the Hospital Section at the recent Minneapolis meeting of the Association put up in bound volume form. A hospital number of the *Journal of the American Medical Association* will be issued early in October, and will contain all the papers read at Minneapolis, with illustrations and discussions. A few of the papers are too long for publication in the *Journal* and will have to be cut, and some illustrations will have to be omitted; but the transactions, if published in bound form, will contain everything. One hundred copies of the transactions will have to be ordered to justify their publication. Those who wish the transactions at $1.00 a copy will order direct from E. C. Shelley, American Medical Association, 535 Dearborn street, Chicago.

# NOTES *on* NURSING

### Dr. Osler Talks to Nurses.

The following is an abstract of an address delivered by Sir William Osler to the graduating class of 1913 of the Johns Hopkins Training School, taken from the *Alumnae Magazine:*

"Now, what shall I say to you graduates? Words of advice? Too late. As nurses, your characters have been forming in the past three years. You may modify them slightly; you never can change them essentially, and there is no reason why you should. Words of warning? They are unnecessary too. I expect you have had a good many serious words of warning. They come so easily and they cost so little, and they do so little good. And, anyway, this is not the occasion for words of warning. Words of congratulation and encouragement are much more appropriate—congratulation because you have passed a long period of training, and encouragement because the outlook was never more favorable than at present for women in your profession.

"There are four main lines open to you. There is institutional work, which has its attractions to many of you, though it has its disadvantages. Institutional life is very apt to get a person into a groove, which gets deeper and deeper until he cannot see over the edge of it. However, it is a life of extraordinary interest and will attract very many of you, very many of the best of you. The life of a private nurse has many more attractions. It is much more varied, much more trying, but it gives a person who is interested in life and interested in men and women the advantage of an experience that is obtained by no other class of people. No other people in the world see men and women as the private nurse does. She sees them, as I once said before, in mufti, with all of their mental and moral, and many of their bodily, clothes taken off. For a student of human nature there is no other such profession, and many of you will know a great deal more in a few years than you do now.

"The work of the district nurse I hope will attract many of the best of you. I often think if I were not a doctor in the easy berth of the Regius Professor of Medicine in the ancient University of Oxford, I would like to be a district nurse. I do not believe there is an occupation in the world in which a person has as many opportunities of doing as much good to their fellow creatures, and I do hope that many of you will take up this work, which is now so much encouraged and is under such favorable aspects in connection with the social service work. But, apart from this social service work, the growth of which is so encouraging, the tuberculosis work and the ordinary district work should appeal to very many of the best. I should like very much to see what is known in the old country as district nursing work extend very largely throughout the country districts here.

"So the choice for each one is a wide one, and, whichever field you pick, the opportunities are great for the exercise of your talents and for the development of your virtues. Of these there are seven—the mystic seven—your lamps to lighten your work, and they are tact, tidiness, taciturnity, sympathy, gentleness, cheerfulness, all linked together by charity. And now for a brief resume of these seven virtues and their exercise.

"Tact is the saving virtue without which no woman can be a success in any way, as a nurse or not. She may have all the others, but without tact she is a failure. With most women it is an instinct, her protective mechanism in life. It enables her always to do the right thing at the right moment. It is one of the greatest of human blessings that so many women are so full of tact. The calamity happens when a woman who has all the other riches of life just lacks that one thing. I remember one such woman in a hospital with which I was connected, who had the greatest difficulty with the Board of Trustees to obtain a revolution in the matter of training. They were antique, they were obstinate and self-opinionated, and they regarded their hospital as ideal, which it was not. We had appointed a woman who, to all intents and purposes, had all the necessary qualifications for the place. She was well trained, she had a splendid presence, and she had a good record in her school, but in six months she had all the trustees by the ears, she had all the doctors against her and all her head nurses up in arms. All due to a congenital deficiency in tact. She simply could not do any one thing right at the right time.

"Now, as to tidiness it is not necessary to speak to the modern nurse. Neatness is the very essence of her work. It is the prime duty of a woman of this terrestrial world to look well. Neatness is the asepsis of clothes, not the carelessly tied shoestring or the dorsal infirmity of a waist and skirt too illy joined.

"The third virtue is taciturnity. There is an evil significance connected with the word, and rightly, because there are two forms of it. I took a position for a few weeks at a hospital in the Province of Ontario a week after I graduated. There I met, for the first and only time, the incarnation of the spirit of taciturnity. It was in one of the ward nurses. She was taciturn to such a degree that she never in the six weeks I was in that hospital smiled at me. This is the only real instance of taciturnity with which I have ever come in contact. Indeed, she was never known to smile at a patient, or at anybody. This is a type of taciturnity that I need not speak of. But there is also what Sir Thomas Browne calls 'the gift of taciturnity,' as he wisely says: 'Think not silence the wisdom of fools, but the honor of wise men, who have not the infirmity, but the gift, of taciturnity.' It is this gift of taciturnity I should like you all to cultivate. It is so much needed. There are no people in the community who need to cultivate this gift of taciturnity more than our trained nurses. Think of the opportunities they have and how they are tempted by their patients, who talk to them, who gossip and who expect to be told by the nurse all sorts of things. And very many patients are so attractive, it is hard not to speak to them nicely concerning things you should never open your lips to them about. Never under any circumstances tell moving stories of cases, never for a moment divulge what has passed within the house of another patient, utter no word about your past record as a nurse in connection with cases—nothing on any of these subjects should ever pass your lips. I speak rather frankly on this point, because I know it is needed. I know it is sometimes a necessity that one should speak strongly and firmly to members of the nursing profession on this point, for patients are very often greedy of the very sort of news that nurses are sometimes apt to give them. As I said here once before, if you have heard anything, let it die with you.

"Now, of the fourth nursely virtue, sympathy, you must have that in full measure, but it must be poured out on your patients with a good deal of discretion. Learn to withhold it. There are many cases that seek sympathy just as a drunkard seeks his dram and as the morphia eater looks for his morphia. There are patients who eat the hearts out of nurses by asking for too much sympathy and by getting it when they do not deserve it.

"Gentleness is your birthright as a nurse. It is expressed by words, by hand, or in motion.

"Cheerfulness is to preach happiness by example, and this is one of the chief functions of all cultivated women. In a nurse it is an essential virtue. It is expressed in the face and in the way in which you go about your work. There is no such blessing in the world as cheerfulness. It is not always easy to obtain. You cannot always have a bright face amid sad surroundings, and particularly the sad surroundings in which you will often be placed. But your face must not show what you feel. Look for the brightest and you will see the brightest, or, as Ruskin well says, 'Look for the shadows and you will see them.' There is so much sorrow and so much suffering that only the bright and cheerful fulfill the law of bearing the burden of others.

"Of the last and of the greatest of the nursely virtues, charity, I need scarcely speak. Gently to scan your

brother man, still more gently your sister woman, to judge no one harshly, to live as closely as possible to the counsels of the sermon on the mount, may enable you to live in the true spirit of nursing. These riches shall not fade away in life, nor any death decrease."

### The California Eight-Hour Law.

Everything is not smooth regarding the recently enacted California law limiting pupil nurses to an eight-hour day. No one seems to have any particular objection to the short day; but the women at the head of the training schools on the coast are not sure they want specific hours fixed and enforced by the State Bureau of Labor, as provided in the law. One of these women, writing recently to her alumnæ association in the East, said:

"I am in Sacramento to endeavor to get registration for California and to defeat a law placing our schools in the hands of the Bureau of Labor in the matter of hours of duty. At first they wanted to include all females employed in hospitals—superintendents, assistants, etc.—in an eight-hour day and one day in seven rest, which makes a forty-eight-hour week. Rather than run the risk of losing the entire bill, they amended to include only pupils. Even so, we do not feel our schools should be controlled in the important matter of the arrangement of hours by the Bureau of Labor and subject to the inspection of their deputies with the methods they employ. While I strongly advocate an eight-hour day system which is elastic and accommodates itself to emergencies, I most strongly oppose an eight-hour *law* which is *fixed* and does not accommodate itself to emergencies. This is a most serious matter and must be taken up by our organization at once. California is being tried out and if it passes here, then it will be pushed into every other state. It has its origin with the Consumers' League. Get to work and let us know what you think."

Miss Lydia H. Keller, R. N., superintendent of Cobb Hospital, St. Paul, has been appointed by Governor Eberhart a member of the Board of Examiners of Nurses. A definite campaign was waged in Minnesota over this appointment, and the inference goes with it that Governor Eberhart has sided with the small hospitals. It seems the old board was in favor of discontinuing the training schools in small hospitals, or compelling them to arrange for affiliation with larger institutions in nurse training. Miss Keller has been at the head of Cobb Hospital for several years.

Philippine women who are graduates of the Manila General Hospital are being appointed to visiting nurse positions and sent to the outlying provinces as rapidly as they can be prepared for the work. Their duties will include inspection of the homes and living conditions of the people, and especially inspection of infant care. They are to instruct mothers in the care of their children, clothing, housing, feeding, and cleanliness. They are also to look after the general hygiene and sanitation of their respective communities.

The Massachusetts General Hospital and the Illinois Training School for Nurses (Cook County Hospital) have opened their doors to graduates of the Philippine General Hospital in their post-graduate departments. The training in the Manila hospital is four years for those who intend to enter institutional work and two and one-half years for those who intend to do private nursing. It is said by American physicians who work with them that the Philippine women make excellent nurses.

The California Legislature passed the bill for an eight-hour day for pupil nurses, and it has become a law through the signature of the governor. Opposition to the proposition seems to have increased since its final enactment into a law, but it will undoubtedly be given a fair trial.

# QUERIES *and* ANSWERS

This department is conducted for the information of subscribers. To be of service, it must be limited to short, pertinent queries that can be answered in kind. Names of manufacturers or merchants cannot be given and illustrations will not be printed. Every letter must contain the writer's name and address, but these will not be published.

### Sterile Gauze and Cotton.

To the Editor of THE MODERN HOSPITAL:

Are "hospital" gauze and cotton sterile, as we buy them? R. M.

They are not sterile unless so labeled, and then they must come hermetically sealed from a house that is above suspicion. Obstetric packages come in that way, for home use.

### Vegetable Peelers.

To the Editor of THE MODERN HOSPITAL:

Are vegetable peelers practical, and do they save time and money? S. W.

Some are wholly worthless, especially those that have metal graters. The upkeep of these is prohibitive. The carborundum graters last a long time. Careful hand peeling saves more of the vegetable than any machine, but, where wages must be paid to workers, the machine is probably cheaper. It is said there are peelers now that remove the eyes and clean out the stems. We have not seen them, and doubt the claim. It is doubtful whether peelers save more in weight than hand work, but they are far quicker. Peeling raw vegetables, either by hand or machine, robs them of the best of their food value, which lies just under the skin. No doubt large hospitals that use expensive help will do better with the machine, but we doubt very much whether small hospitals will find machines either cheaper or better.

### Cubic Foot Cost.

To the Editor of THE MODERN HOSPITAL:

When an architect tells you that your hospital will cost 25 cents per cubic foot, does he mean the finished building, ready for patients? H. T. B.

You must ask him in every case "just what 25 cents means," because costs vary all the way from 22 cents to 45 cents, depending on many things. In a hospital the plumbing is a great consideration. If your piping is well arranged—that is, if your risers are all close to the fixtures—a great saving can be made, but this good arrangement goes all the way into the division of space, and often the nursing part of the administration will insist on carrying pipes across corridors and into far distant places for their convenience. This costs money—perhaps it is often economy in the long run. Then, the ornamentation is a great item, and a few gargoyles and carvings, or a little marble in the front hall, will run the cubic foot cost away up. Ornamentation and excess plumbing are usually not figured in the flat cost of a hospital.

### Ventilation.

To the Editor of THE MODERN HOSPITAL:

What is the "plenum" system of ventilation, and is it efficient for hospital purposes? P. W. N.

The name "plenum" is taken from the Latin word meaning "full" or complete. It means a system that introduces pure air into a room and takes away the foul air; that is, the system provides a full or complete circuit of air movement. It is not efficient except at a cost for installation and operation that is prohibitive in a hospital. As installed in hospitals in the large cities, more dirt is "introduced" than pure air, because the air is sucked in under vacuum pressure, pulling the dirt and soot in with it. If there are windows enough, properly arranged for the protection of patients against drafts, plenty of the best air there is on the outside will find its way in; then if we have the so-called "exhaust" system, with outlets in the room, leading to a "pull" fan at the roof, we will have the most efficient practical system there is at the present time. This fan "pull" system should be installed in the kitchens, serving rooms, utility rooms, and toilets.

### Fumigation.

To the Editor of THE MODERN HOSPITAL:

Do you consider that the fumigation of a room that has contained erysipelas, by the so-called formaldehyd-permanganate gas method, efficient for the destruction of the microorganism; or is that method efficient for any of the communicable diseases? B. H. J.

It is not efficient. Anderson and Goldberg, in the laboratories of the Public Health and Marine Hospital Service at Washington, very conclusively disprove the efficiency of all the gas fumigants, and most hospital administrators have also had costly proof that gases turned loose in a room without pressure are practically useless. Reliance must be placed on thorough washing of walls, floors, ceilings, beds, and furniture with 5-percent phenol, and the soaking of blankets and linens for some hours in the same solution. Shades should be of washable or Holland cloth and also scrubbed with phenol. Rugs (if used), mattresses, and pillows must be subjected to the heat of a vacuum sterilizer at 250° F. for forty minutes. The so-called "rag" rugs are excellent because they lend themselves to this sterilizer treatment. A few badly informed medical men insist upon gas fumigation, and in some hospitals it is done as a mere concession to a worn-out belief.

### Buying Bandages.

To the Editor of THE MODERN HOSPITAL:

Which is more economical, to buy cotton and roll the bandages, with the help of convalescent patients or with an electric winder, or to buy the bandages ready-made and rolled in the required widths and lengths? D. W. T.

Cotton or muslin bandages are made from cotton that has a value per pound as well as per yard. The large bandage makers buy in hundred thousand yard or pound lots. They can buy far cheaper than you, because you buy but a few pounds or yards. They roll by machinery.

There is a nice way to tell just how you are coming out financially in this matter. Buy, say, twenty yards of the grade of bandages you use in the shape of yard wide or two-yard wide cotton goods; weigh the piece carefully, then cut it into four five-yard pieces, tear your bandages and have them wound. Now go to market for rolled bandages; they will be offered to you by the pound. You know how much you paid for your twenty pounds of goods, and how much it cost you to cut, tear, and wind, and how many pounds there were. You can tell exactly which is the best way to do hereafter.

There is a little secret about bandage buying. Some of the hospital supply people, in making up specialties, have odd lengths and odd widths left over. They roll these pieces into odd bandages, some of them only two or three yards long and all sorts of widths. You can buy them for about 30 percent less than regular widths.

### "Distilled" versus "Sterilized" Water.

To the Editor of THE MODERN HOSPITAL:

What is the difference between "distilled" and "sterilized" water for operating rooms? B. M. H.

This question is now undergoing analysis in some of the best laboratories, but its discussion is an academic one up to this time. Some pathologists take one side and some the other, and the same is true of the surgeons.

Distilled water contains no organic matter; if the distillation has been carefully done and if proper methods are applied, even the albuminoid gases (ammonia) are carried off and the water then becomes "ammonia free" and usable for chemical purposes in the laboratory. Some surgeons object to distilled water on the ground that it has been deprived of its mineral matter, especially salts, and that it will take salts from the tissues with which it comes in contact—as, for instance, in abdominal irrigation—and thus increase the distress of an already sorely tried patient. Distilled water contains no bacteria of any kind, since all microorganisms are left behind as the water goes over as steam or vapor—always provided the apparatus was entirely free from microorganisms when the process began. But distilled water is wholly without inherent resistance and is an inviting field for bacterial growth, if any are present anywhere along the course. So that, if distilled water is used, one must be sure of the sterility of the apparatus, because at no stage of distillation does the water rise to a temperature point sufficient to destroy even the mildly resistant microorganisms.

Sterile water, as we use it from water sterilizing apparatus in surgical rooms, has been made so by heat up to 250° F., or under a pressure of fifteen pounds. Usually the water has previously gone through some form of power plant filter, and most of the solid matter has been eliminated, but not all. But there is no living matter in sterilized water, and it has retained most of its normal salts, though some will have been precipitated by the heat, and become attached as scale to the inside of the boiler.

Most pathologists and surgeons would accept either "distilled" or "sterilized" water if they could be quite sure it had not been reinfected after undergoing the process—and, after all, that is the great problem. Some part of the faucets has been exposed to the air and to bacterial infection between the drawings; the containers are also hard to keep sterile, and, if the water is used for irrigation with the usual irrigator and tubes and funnel, it is impossible to assure sterility. The question for this reason becomes an administrative one, and contemplates a fine technic for getting the water out of the sterilizer or retort into the operative field in a sterile condition. This is the reason why most surgeons feel safer when the water sterilizing apparatus is located where they can see it and not at some central plant, with an intervening system of plumbing, which also may be infected.

Very frequent tests should be made to determine the sterility of water. The trouble here also is that some surgeons contend that water may show sterility under all the laboratory culture media, and yet may develop virulent organisms in that peculiarly inviting field, warm human tissue loaded with bacterial excitants.

### Formula for Sterilizing Catgut.

To the Editor of THE MODERN HOSPITAL:

Will you kindly give the formula and technic for sterilizing catgut—a way that can be relied on? J. P. C.

There is no way of sterilizing catgut "at home" that is efficient. Gut may be rendered sterile in several ways—by heat, with alcohol, iodin, and the like—but, if any of these means are employed, the tensile strength, flexibility, and general virtue of gut for surgical purposes are so destroyed that it is wellnigh useless. Thoroughly trained scientific people are engaged in the business of preparing catgut, and even they will occasionally fail. There is no advantage, financial or surgical or administrative, in home-prepared gut, and every argument is in favor of its purchase from a concern that does nothing else, and whose stock in trade is the confidence of the surgeons of the country. It is deemed inexpedient to give a process or a technic for "home"-prepared gut, because the practice is dangerous, except under conditions that do not obtain in busy hospitals.

### Hospital Floors.

To the Editor of THE MODERN HOSPITAL:

Is there any "best" hospital floor? We are in the fascinating work of "sketching" for a new building, and cannot decide on floors—there seem to be so many opinions. D. W. G.

The New York Post-Graduate Hospital, recently completed by McKim, Mead & White, has "plastic linoleum" in most places—that is, a material like linoleum, but laid, rolled, and hardened in place. It is too new to judge as to its acceptability. The new Children's Hospital of the Michael Reese in Chicago has quarter-inch thick, six-foot widths, solid amber color, battleship linoleum throughout. The cove bases are run out on the floors for six inches, nosed with a brass rim, and the linoleum is made to come snug flush with this rim. Experience has taught that it was necessary to cement the linoleum to the floor throughout instead of around the edges only. The new Cook County Hospital, now under construction, is designed to have a variety of floors as follows:

All corridors—12-inch hexagonal terrazzo.

All large wards—12-inch square cement blocks in large patterns.

Large administration entrance, stairs, etc.—Tennessee marble, very carefully selected for wearing evenly.

Interns' room and dining rooms—hard wood.

Utility and sink rooms—solid cement, smooth finish.

Toilets and baths—6-inch square white vitrified tile.

Stairs, stair landings, examination rooms, and admission suite—one of the composition floorings in solid color.

Many excellent judges like the cork floorings, especially in elevators, and for the first step outside elevators, for stair landings and treads, for inclines, for hall runners, and some good administrators use cork instead of linoleum.

There is no "best" floor, and the future will probably develop a well-settled tendency to select different floors for different purposes. Always remember that the stone floors, of whatever kind, make walking hard for the nurses, are "cold" in the wards and in living rooms, but rugs and carpets are inadmissible except in the quarters of well people, and that the linoleums are ideal for walking, but will be difficult to keep clean and aseptic unless very carefully laid and cared for.

### An Aerial Ambulance.

There was tried out at Aldershot, England, recently an emergency ambulance in the shape of a biplane. Colonel J. F. Donegan, of the army medical corps, is the inventor, and the device to be carried by the air route includes a folding operating table and all the auxiliaries, anesthetics, instruments, and dressings. Even so thoroughly conservative a journal as the *Hospital* makes the announcement as merely a chronicle of the day.

### Liability of Charity Hospitals.

It has been a pretty well settled principle of law for a number of years that charity hospitals—and this means that class of hospitals that are conducted as "no-profit" institutions—could not be held in damages for the neglect of a nurse or other "servant." The matter had not, however, been threshed out in the higher courts, and now the Supreme Court of Nebraska hands down a decision upholding this view of the law. A pay patient who was insane committed suicide. The fact that the patient was paying for his care made no difference to the supreme court, because the money applied not to private profit, but to the benevolent purposes of the institution.

### New Isolation Hospital for St. Louis.

The new isolation hospital for the city of St. Louis will have a capacity of 500 beds, will be erected on the unit system, and is expected to cost in the neighborhood of $500,000. Guy L. Mariner is the architect and Dr. Cleveland H. Shutt, hospital commissioner, consultant.

There will be four L-shaped buildings, two stories high, arranged for sectional isolation. A separate quadrangular admitting building, containing sixteen isolation units, will be erected in the center of the group. Three of the main buildings will be used for scarlet fever, measles, and diphtheria, respectively. The fourth will be used for miscellaneous diseases. A playground for each building, with a small pavilion, to be located between the inner angles of the buildings, is being provided. The physicians and attendants for each building will be housed within its walls. The nurses will be accommodated in a small cottage in close proximity. Much glass will be used in the partitions. There will be several rooms, and none of the wards will accommodate more than twelve patients. These wards will be arranged with glass partitions, so that there will be practically no more than three patients in each ward. Each building will be provided with a service room, containing steam sterilizers for linens, garments, bedding, etc., a sterilizer for utensils, and an incinerator. All materials to leave the building will be placed in one or other of the sterilizers by attendants, and after due time a porter, being notified by a signal system, will come and remove the materials on an outside corridor after they are sterilized.

Units in the isolating building will be so arranged that an individual or family may be isolated completely. Telephones will be provided in each of these rooms, and a small room is also provided for the nurse. The general plans of the isolating building are the same as those carried out in the Philadelphia hospital for infectious diseases. Each unit will be completely surrounded by an outside corridor. Telephone and electric signal systems will be established throughout, and refrigeration will be piped to each building. The morgue will be arranged to provide for a small chapel, and preparation and fumigating room will be separated from it by an open corridor and the morgue room proper. It is intended to carry out a color scheme both in the buildings and their equipment for each of the more important diseases.

# NEW INSTRUMENTS *and* APPLIANCES

Vincent Mueller, Technical Editor.
Geo. W. Wallerich, Associate Editor.

## A Flexible Gastroscope.

As far back as 1879, after Professor Nitze had solved the problem of the examination of the bladder by means of the cystoscope, he gave his attention to the construction of an instrument for the examination of the stomach, or, as it is today called, a gastroscope. He had in mind an appliance which would have the advantages of the lens

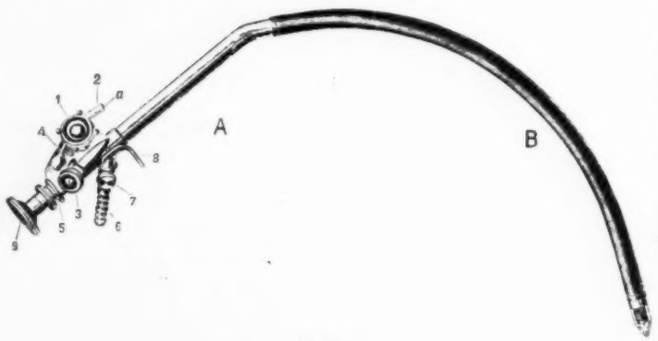


FIG. 1.

system as contained in a cystoscope, yet which could be introduced into the stomach in a rather flexible condition, afterward being rendered rigid through mechanical manipulation. The work which Professor Nitze did along this line was very extensive, covering a period of years, first in Dresden and later in Vienna, in conjunction with Leiter, the instrument maker. Apparently, however, the experiments were not satisfactory, in so far as a flexible instrument was concerned.

During the last three decades a number of others have, at different times, given their attention to the design of a practical gastroscope, among whom should be mentioned Mickuliz, Rosenheim, Kausch, Foramitti, Jackson, Kuttner, Kelling, and Elsner. As the result of the work of these men, a number of instruments were made—some experimental, others were completed—and have met with more or less success, but all of them that have been used to any extent in practical work are of the nonflexible type.

Some five years ago Dr. Martin Sussman, of Berlin, constructed a crude model of a flexible gastroscope, which seemed to fulfill the requirements in a theoretical way, but he experienced difficulty in having the optical system and mechanical parts made. As a result, his gastroscope was not completed until the work was taken up by Work, of Berlin, who, on account of his extensive experience in the manufacture of cystoscopes, was quick to appreciate the possibilities of a gastroscope of the kind Dr. Sussman had in mind. After four years of experimenting, and meeting with many disappointments, he finally succeeded in perfecting the instrument as shown in the illustrations.

Contrary to the impression one might first have from these illustrations, the instrument is extremely simple in manipulation. It is not difficult to appreciate that the workmanship must necessarily be of the highest order, yet at the same time the instrument has been so designed and manufactured that the operator does not need to concern himself as to its working parts, as all adjustments are made in the simplest possible way. The appliance consists primarily of two parts—the nonflexible part A and the flexible part B. The total length from eye-piece to the lens at the distal end is 74 cm., of which part A, nonflexible, is 24 cm. and part B 50 cm. The diameter is 12½ mm.

The nonflexible part A is set at an angle of 150 degrees to part B, and, in spite of this angle and the comparative great length of the instrument, a clear view can be had of the walls of the stomach when distended with air, due to the ingenious system of lenses which has been adopted. On part A is mounted the ocular (9), the turning device with indicator (3) for revolving the objective at the distal end of part B, lever (2) for placing the instrument in a flexible condition, tension wheel (1) for replacing the instrument in a rigid position, connection for compressed air tubing (6), with needle air control valve (7) and a hook or finger rest (8). Part B is covered with a pure gum tube. At the distal end of the instrument is located the objective. Mounted on each side

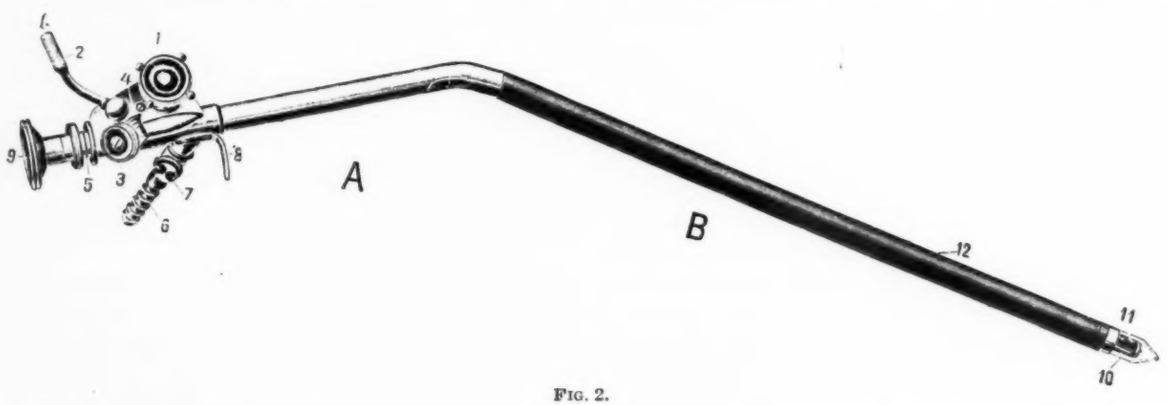


FIG. 2.

of the objective is a small flat tungsten filament electric bulb, the objective and bulb being covered by a hood or protector which is made of glass and metal, preventing the entrance of moisture and of mucus, which might otherwise cause difficulty in the illuminating on account of short-circuiting of the current. This protector or hood also prevents any possible obstruction of the lens system in revolving, as all turning parts are thus inclosed and a complete circle is described by revolving the lens with its

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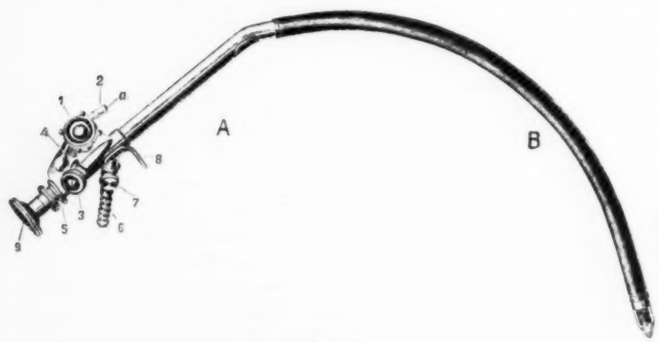


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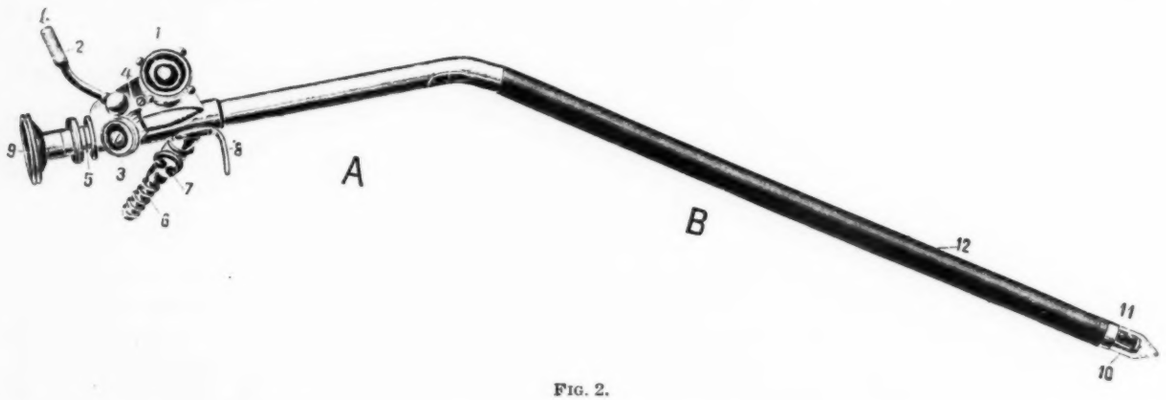


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Published the First of Every Month by

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two small illuminators. In earlier forms of gastroscopes this turning feature offered quite an objection in that the entire tube was turned, making the procedure a painful one to the patient in such cases.

Fig. 1 shows the gastroscope in a flexible position, and Fig. 2 in a rigid position, as set for the purpose of inspection. Fig. 3 shows the method of introduction. Change from rigid to flexible is easily accomplished by simply

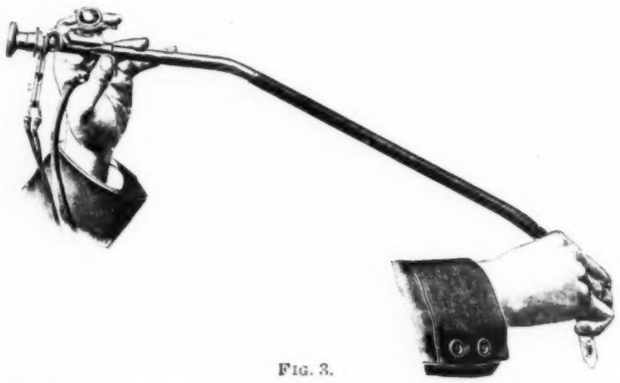

FIG. 3.

throwing back the lever (2) from position A to B and giving it a slight amount of pressure. To replace in a rigid condition, as for inspection, the lever (2) is thrown in position A and a quarter turn of the tension wheel (1) made in a clockwise direction.

The system of lenses employed deserves special mention from the fact that they are unusual in many respects. It is generally considered that, in passing the instrument, the shortest distance from objective to the posterior wall or entrance to the cardia is 2 mm. and that the average distance in a well-inflated stomach is 7 cm. from objective to the part under inspection. The lens system, however, is universal in so far as an object will present a sharp, clear view, whether within 2 mm. of the lens or at a distance of 10 cm. The eye-piece (9) may be adjusted so as

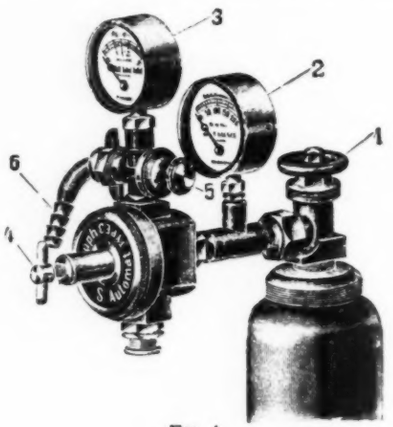


FIG. 4.

to accommodate itself to the lens system. The range of the field under observation at one time is sufficient, so that an area measuring 6 cm. across may be observed without any readjustment of the instrument. This makes it possible to observe the entire wall of the stomach, since the lens system can be turned so as to describe a complete circle and the instrument may be moved downward to any point. The only part remaining which cannot be conveniently examined is the small portion of the stomach lining directly under the distal end of the gastroscope.

The inventor claims that his instrument can be intro-

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duced without difficulty in every case where it is possible to introduce a stomach tube; that the introduction is easier than with a straight nonflexible instrument, and that it can be accomplished with comparative comfort to the patient (if one can speak of comfort at all in gastroscopy).

As an anesthetic, a 10-percent cocain solution is recommended. The patient is placed in a recumbent position on his right side, drawn up with a pillow under the head.

Fig. 4 illustrates an apparatus for the purpose of inflating the stomach with compressed air during the operation, but a foot bellows in connection with a manometer can also be employed for this purpose.

The Sussman gastroscope has been pronounced by specialists who have had considerable experience in gastroscopy as one of the greatest aids yet devised for the purpose of diagnosis of diseases of the stomach, and it seems that the instrument deserves the closest investigation by stomach specialists and internists.

### Fluoroscopy Again Coming to the Front.

With the discovery of the x-ray, back in the early part of 1896, the fluoroscope offered the best means of diagnosis, and, owing to the remarkable properties of the x-ray, the early workers used the fluoroscope for hours at a time, because everyone in the scientific world was absolutely ignorant of the harmful effects which were due to prolonged exposure. This was, of course, before science had discovered that the x-ray had therapeutic properties. The ultimate result was that any number of pioneer x-ray workers received injurious effects from the x-ray, and a number of fatalities were reported. This astonishing news had a tendency to set back the art of fluoroscopy to a considerable extent, and it has been only within the last few years that the diagnostician as well as the surgeon is beginning to realize that certain actions of the viscera can be studied to better advantage with a fluoroscopic screen than by means of the x-ray plate.

Concentrated and applied study to this branch of röntgenology has clearly demonstrated that certain pathological conditions can be brought out only by means of a fluoroscopic examination. This should be of special interest to everyone in the medical and surgical field.

Until recently the barium platino-cyanid screen was the one used for fluoroscopic examination. This screen has always offered some objections, principally in that it is subject to very rapid deterioration. A new screen known as the astral has recently made its appearance and is growing in great favor. This new screen is made of a substance which fluoresces in the same manner as the barium platino-cyanid screen, but with a brighter, more contrasty, white light, under the same working conditions of the x-ray tube. The fluorescent material is said to be largely wilmite.

From the fact that this screen is more active as regards its fluorescent properties than the older types, it naturally means a saving in the upkeep of the x-ray tubes, since in many instances the case under inspection does not require as long exposure; or, on the other hand, if the current flow through the tube is reduced, there is, of course, less tube strain, which means added life. It is claimed for the astral screen that an equally bright image is cast, with approximately 60 percent of current flowing through the x-ray tube which would be required in the best grade of barium platino-cyanide screen. The astral screen is immune from damage by exposure to the x-rays—in fact, light of any kind—and is not affected by most acids.

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**Discount to Hospitals and Sanitariums, 25 percent.**

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1000 units in syringe-container.....$1.25
3000 units in syringe-container..... 3.00
5000 units in syringe-container..... 4.50
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**Tetanus Antitoxin** (Slee's refined and concentrated globulin solution)
1500 units in syringe-container.....$2.50
3000 units in syringe-container..... 4.25
5000 units in syringe-container..... 6.00

**Antistreptococcic Serum** (Slee's)
10 Cc. in syringe-container.....$1.50
10 Cc. in vial..... 1.25
20 Cc. in vial..... 2.25

**Antimeningitis Serum** (Slee's)
In packages of two syringes of 15 Cc. each, with special needle and stylet, per package.$5.00

**Smallpox Vaccine** (Slee's)
Glycerinated tubes, per box of 5 tubes.....$0.75
Glycerinated tubes, per box of 10 tubes..... 1.50

**Acne Bacterin** (Polyvalent)
For prices, see next below.

**Staphylo-Acne-Bacterin** (Polyvalent)
Per dozen boxes of six ampules each.....$15.00
In less than half-dozen lots, per box..... 1.50

**Coli-Bacterin** (Polyvalent)
Per dozen boxes of six ampules each.....$15.00
In less than half-dozen lots, per box..... 1.50

**Gonococcus-Bacterin** (Polyvalent)

**Gonococcus-Combined Bacterin** (Polyvalent)
Per dozen boxes of six ampules each (either bacterin) .....$15.00
In less than half-dozen lots, per box..... 1.50

**Antistreptococcus Vaccine** (Polyvalent) (Scarlatina-Prophylactic)
Per dozen boxes of three ampules each.....$ 7.50
In less than half-dozen lots, per box..... .75

**Strepto-Bacterin** (Polyvalent) (Scarlatina-Bacterin)
Per dozen boxes of six ampules each.....$15.00
In less than half-dozen lots, per box..... 1.50

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Per dozen boxes of six ampules each.....$15.00
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Per dozen boxes of six ampules each.....$15.00
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**Pneumo-Bacterin** (Polyvalent)

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Per dozen boxes of six ampules each.....$15.00
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Per dozen boxes of six ampules each.....$15.00
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**Strepto-Bacterin** (Polyvalent)
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Prepared for special cases, in which the stock bacterins are not specially indicated. Prices vary from $5.00 to $10.00, depending upon the character of the specimen.

**NOTE: The above Bacterins are also supplied in syringe-containers, each dose being graded and properly adjusted as to bacterial content for greatest efficiency.**
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**Explanation—All syringes used with the above listed Serums and Bacterins are Slee's special—a great advance over all those previously presented. The exceptional convenience and practicability of this syringe is conclusively demonstrated by the recent action of the Board of Health of New York City, who, discarding its own, hitherto ranked among the most satisfactory, has adopted this syringe for all its products.**

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paratus for fluoroscopic examination, manufacturers have made some excellent improvements during the past year or two. The old box type of fluoroscoping is no more considered a scientific appliance, due, first, to the danger to the operator when using such a fluoroscope, since, in spite of the lead glass windows and protector as usually provided, a great many active rays are sent to parts of the operator's body; second, the area under examination is necessarily limited, and in making comparisons—for instance, of the apices—it is impracticable to shift the fluoroscope from side to side. For that reason larger sizes of screens are now being used for all purposes of examination. The factor of safety from unnecessary exposure of the operator to the rays is one which is given a great deal of attention. The lead glass bowls or protectors which are used on nearly all modern apparatus serve to practically

COMBINATION FLUOROSCOPIC EXAMINING TABLE,
with tube entirely inclosed in a lead-lined housing, with exception of area through which the rays pass to the patient.

limit the rays to the field under observation, cutting out most of the side rays. If such a bowl is used as a means of protection, the best results are to be had by inclosing the tube with some dark material, so as to prevent any reflecting light. Examination is made in a totally dark room, and it is common practice for the röntgenologist to remain in darkness some ten or fifteen minutes before the tube is rendered active.

Science shows us that the röntgenologist has in this way increased his powers of perception many times, and he is enabled to see clinically conditions and actions which would have been impossible had he not taken the precaution to accustom his eyes to the darkness. Most apparatus now built for fluoroscopic examination is so arranged that the operator can quickly and easily examine

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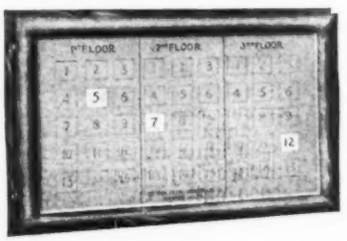

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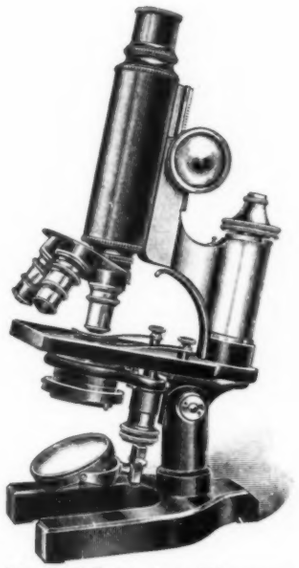

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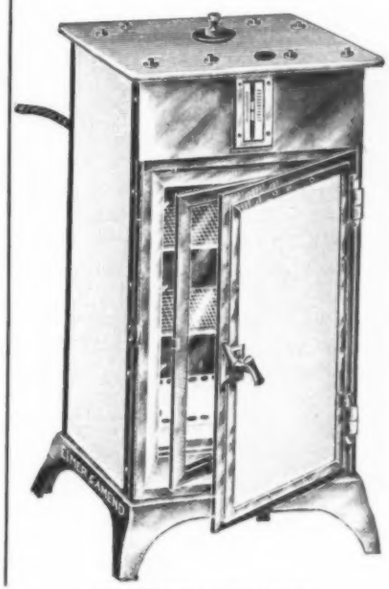

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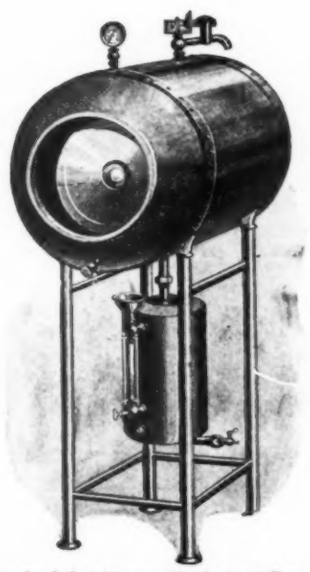

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Barnstead Water Still

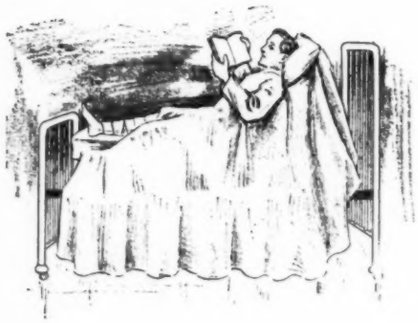
any part without disturbing the patient. Examination can be made with the patient in any position. Provision is also generally made for applying an x-ray plate in the place of a screen, so that, when the examination is made and a permanent record is desired of any part under observation, the radiograph is quickly completed.

Most x-ray laboratories and the hospitals are equipped with the proper apparatus as regards the coil or generator. If an induction coil is used, it is best that the interrupter should be one of the mercury type, preferably one working on the centrifugal principle rather than the older type of mercury turbin interrupter. These centrifugal mercury interrupters are now manufactured so as to do away with the emulsification of the mercury, making it unnecessary to clean them as frequently as was the case some years ago.

Where an entirely new x-ray plant is to be installed, it

COMBINATION RADIOGRAPHIC AND FLUOROSCOPIC EXAMINING TABLE.
When used with the fluoroscopic screen, which is suspended from a counterbalance in the illustration, the x-ray tube is placed under the table, rays directed upward, and the screen held over the patient.

is well to consider one of the newer types of so-called transformers, as these are now made so that the current may be regulated to such an extent that from one milliampere to as high as one hundred and fifty, or even more, milliamperes can be passed through the tube without the use of mercury, electrolytic or antiacid interrupter. Tubes to be used should be of large diameter—that is, 7 inches or larger. The water-cooled type gives the best results for screen examination, as the vacuum can be more evenly maintained than the tube of the air-cooled type. Tungsten target tubes will stand the heavy discharge of current better than tubes having targets made of platinum or silver. This applies, however, in a general way only. Most operators have certain tubes which they prefer for fluoroscopic and treatment purposes, and frequently one is fortunate enough to secure a tube of the ordinary type which gives surprisingly good results for a long period.

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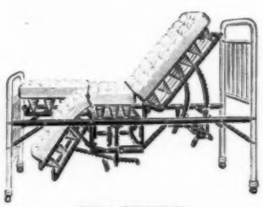
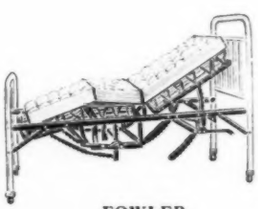


FRACTURE



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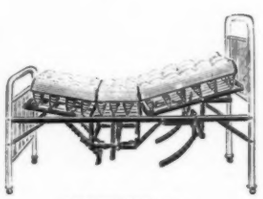
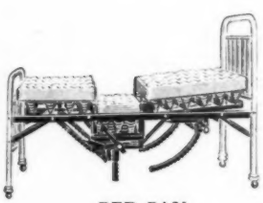


ABDOMINAL



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Eastern Ind. Hospital for the Insane...Richmond, Ind.
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Mt. Vernon Hospital.....Mt. Vernon, N. Y.
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Flower Hospital, 63d St. and Avenue A .....New York City.
House of Rest of Consumptives, Bolton Road .....New York City.
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General Hospital .....Cincinnati, Ohio.
Dr. C. R. Holmes' Hospital.....Cincinnati, Ohio.
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*Correspondence invited*

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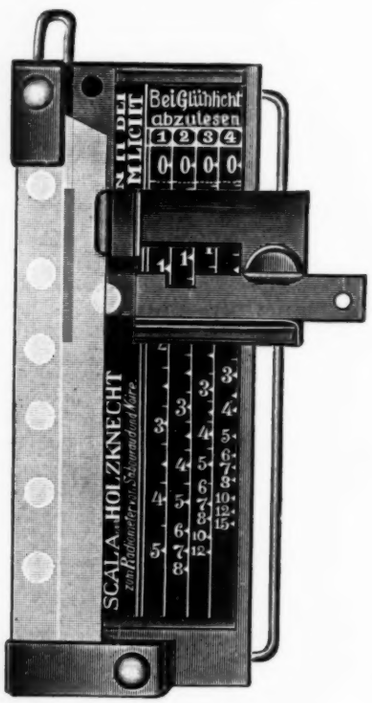
**The Holzknecht Radiometer.**

Since the early introduction of the Röntgen ray, as applied to medical science, many attempts have been made to accurately measure the dosage of x-ray exposure required in certain conditions. The beneficial results when this agent is properly used are, of course, now very generally acknowledged, yet the accurate measurement, until recently, offered a problem to be worked out on a basis which would always permit a known quantity of rays to be applied.

The more simple methods of determining the approximate amount of x-ray exposure have all proven more or less unsatisfactory, due to the fact that there has always been at least one factor which must be estimated by the operator.

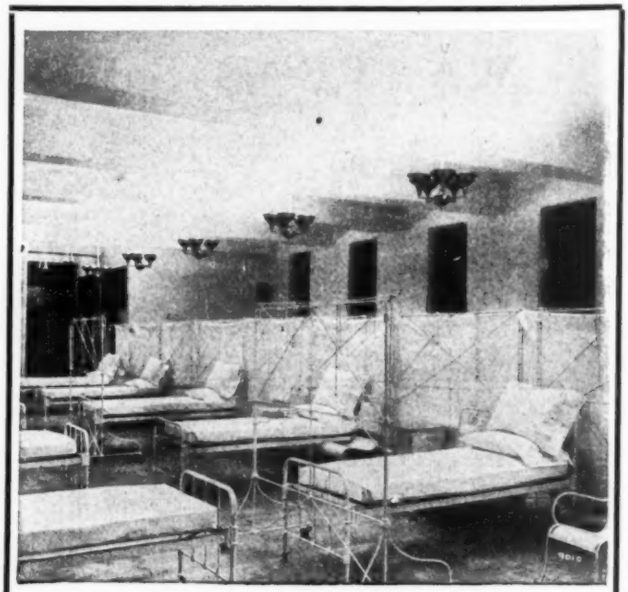
In time past it was common practice to depend on the apparent hardness of x-ray tubes by measuring the parallel spark gap which the tube would "back up." This method, however, was far from accurate, as frequently the




mistake was made of reducing the primary current to the point where but a small spark gap was required. This, however, does not prevent the tube from becoming higher or harder during exposure, so the milliampere meter was adopted in order that the operator could judge whether the volume of current passing through the tube remained the same. If during exposure it became less, this would indicate that the tube was becoming higher in vacuum, and it was reduced. Still there remained the uncertainty of the quality of the ray in regard to its therapeutic action.

Villard then conceived the idea of using certain substances which change in color under the action of the x-ray; thus platino-cyanide of barium, when exposed for a sufficient time to the rays, changes from green to a reddish brown, and this change is in proportion to the quantity of the rays absorbed. This method has been known as Villard's reaction, and upon it is based the more scientific method of measuring x-ray dosage.

Sabouraud and Noiré worked out a system of measure-

# Consider the comfort of the patient when planning hospital illumination

In no place is a restful system of illumination as necessary as in a hospital.

Brilliant, glaring exposed light sources disturb and irritate the nerves. Such a condition certainly does not promote recovery. Good hospital technic requires that everything in the ward or room should promote the comfort and restfulness of the patient. For this reason

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is being installed in many new hospitals. This is the original and only true system of indirect lighting. There are no exposed light sources and no irritating glares with Eye Comfort Lighting. All light sources are concealed in opaque reflectors. The light is thrown to the ceiling and from there gently diffused and reflected throughout the room. There is never a complaint of eye strain in a hospital with Eye Comfort Lighting.

Remember, also, that the absence of glare and shadow makes Eye Comfort Lighting ideal so far as working conditions for doctor and nurse are concerned.

***Write us about hospital illumination***

The following hospitals are equipped with Eye Comfort Lighting:

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Harper Hospital, Detroit, Mich.
Children's Hospital, Winnipeg, Man.
Southern Pacific Hospital, Los Angeles, Cal.

The engineers who planned these installations can save you a lot of time and work. Their services are yours for the asking. Write us about your problems now.

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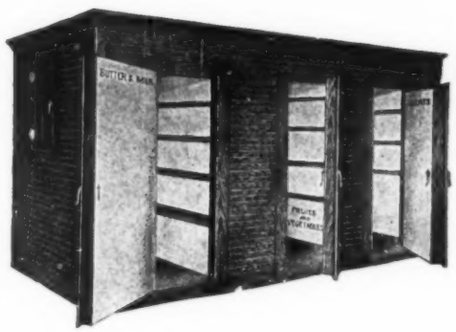

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ments consisting of small pieces of paper, on which a thin layer of platino-cyanide of barium has been attached. The radiometer of Sabouraud and Noiré had, until recently, proven the most satisfactory basis for measurement of x-rays in treatment, but it fell short somewhat as to its measuring qualities and convenience in its application. With this instrument it is possible to read but a single dosage, making it necessary to estimate even the ordinary graduations of dosage.

Dr. Guido Holzknecht, professor of medical radiology at the University of Vienna, has succeeded in combining the valuable features of the Sabouraud and Noiré radiometer in an instrument which makes use of a graded color scale and a continuance color scale. Exact grades of color from green to reddish-brown can be read from the former, and any grade of color from green to reddish-brown from the latter.

The Holzknecht radiometer is made of hard rubber, on the right side of which is mounted a slide. This slide passes over the reading scale, and in the carrier of the slide are placed the reaction piece and the scale piece. The reaction piece is made of heavy cardboard, on one end of which is attached the reagent, consisting of a layer of platino-cyanide of barium in the form of a half disk. Opposite, on the scale piece, is another half disk. When these two are brought together a complete disk or pastille is formed. The continuance scale and the graded scale are formed by covering the disk of the platino-cyanide of barium and the half disk of the same substance on the scale piece with a strip of celluloid. The six disks on the graded scale under the colored celluloid band vary from above downward from a light-green to a brownish-yellow; thus there are six grades of color, representing six different strengths. The above disk in the scale piece, not having been exposed to the x-ray, being placed in the slide under the color band, has the usual greenish-yellow color of the platino-cyanide of barium as used in an ordinary fluoroscope, and, when it is exposed to x-rays, changes from one color to another, depending on the amount of exposure. In this way, moving the scale piece downward until the color matches that of the reaction piece, the exact amount of dosage is determined.

As a basis of comparison, the unit 1 H is now universally considered as one-third of the quantity of x-light which will induce a light reaction of the skin of the face of an adult, and approximately 5 H are necessary to reach tint B of the original Sabouraud radiometer. In order to reach the maximum action of the rays without reaction, the following units would be applied: adults, to the face, 2 H; head and joints, 3 H; body, 3.5 H. In this way one dose may be given at a single treatment, or the dose divided proportionately, so that the total dose would be the same after several exposures. It is possible to read ¼ H, and Professor Holzknecht states that he considers his present radiometer twenty times as exact as his original instrument, and it apparently will greatly simplify the use of the x-ray for therapeutic purposes.

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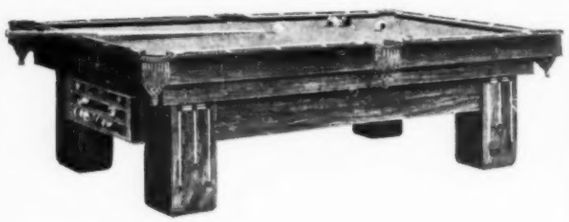
The oldest hospital in the new world is the Hospital Jesus Nazerino in the city of Mexico. It was founded by Cortez in 1524, and is still conducted as a hospital, largely with an endowment left by the great conqueror in his will. The Dukes of Terranova y Monteleon, the descendants of Cortez, still exercise the right granted to Cortez to name the superintendent.

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